VOLUME XXXIV NUMBER ONE

THE NATIONAL GEOGRAPHIC MAGAZINE

JULY, 1918

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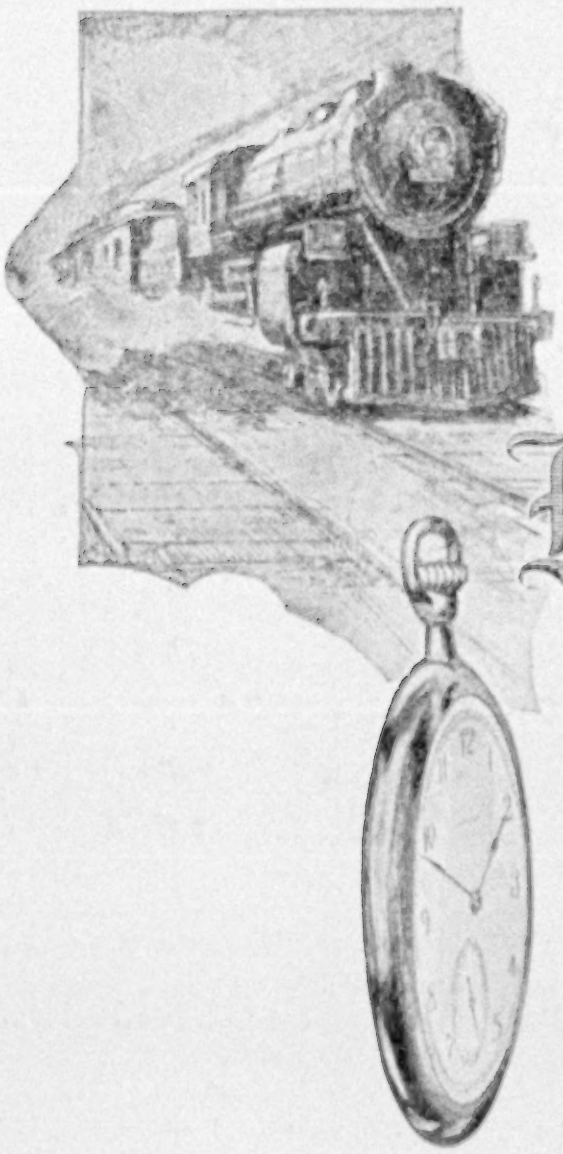

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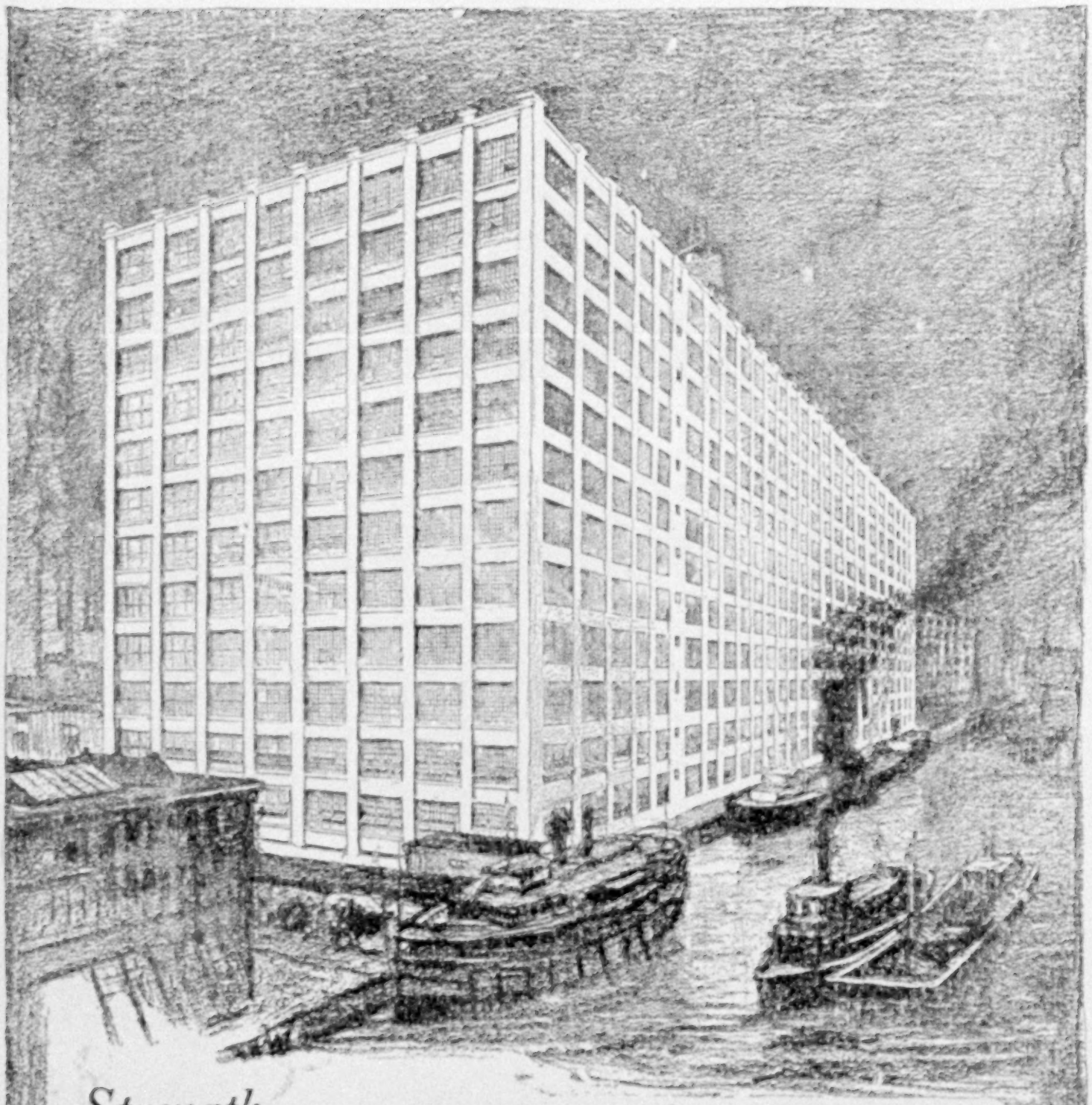

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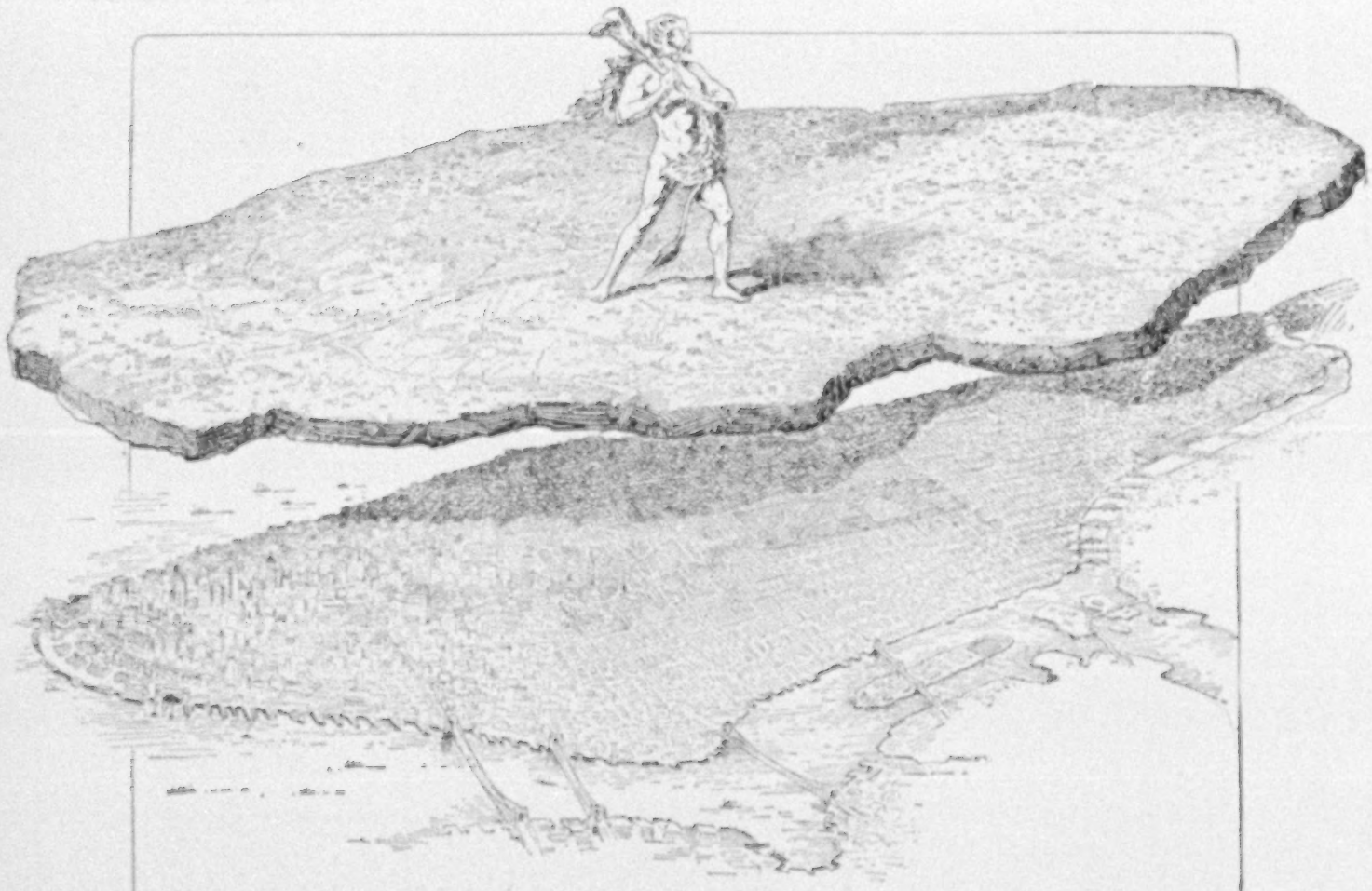

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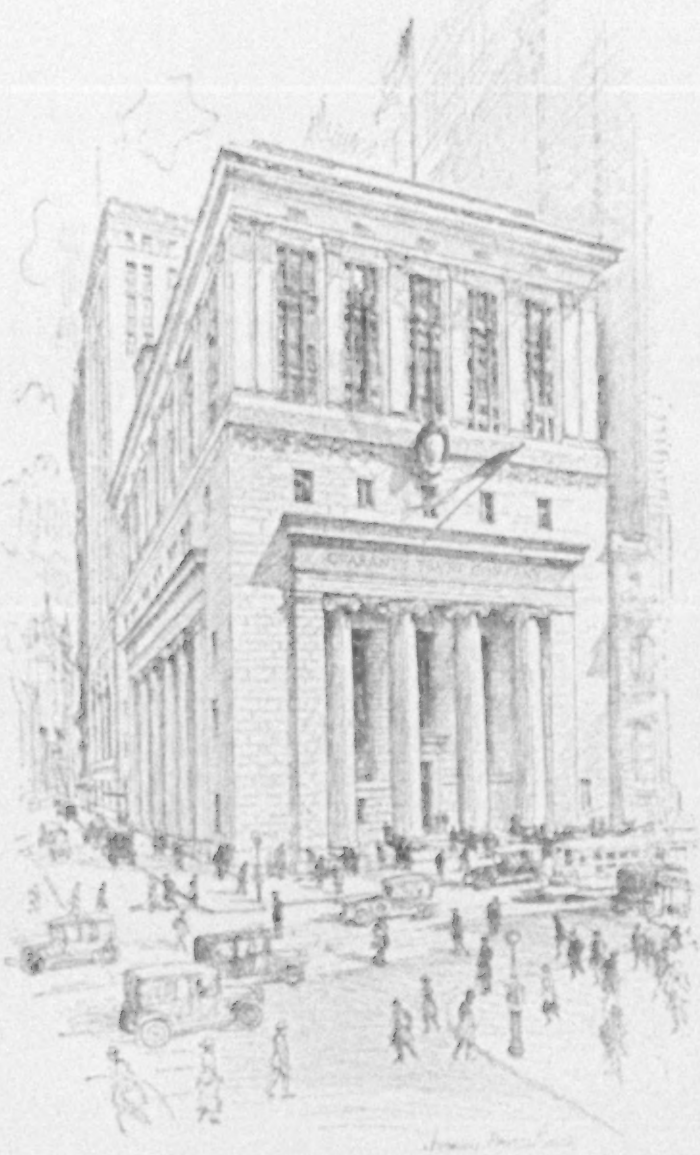

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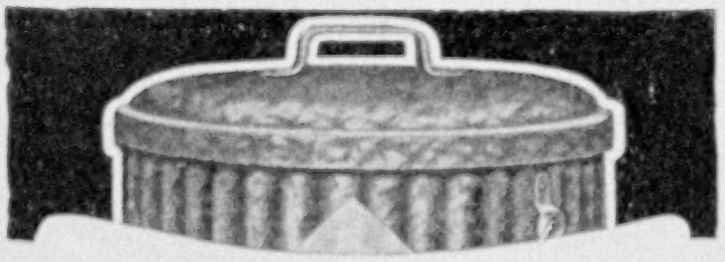

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Philadelphia, 1876

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Sydney, 1879

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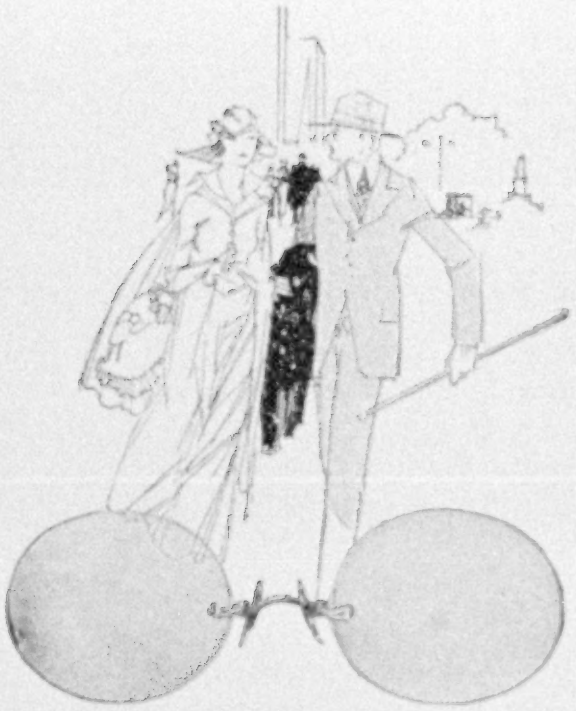

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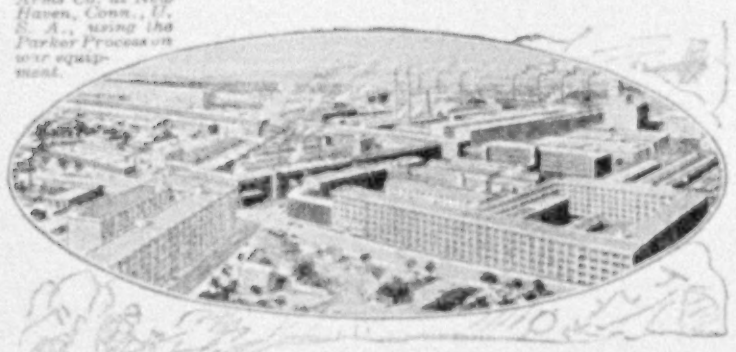

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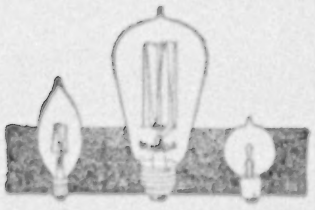

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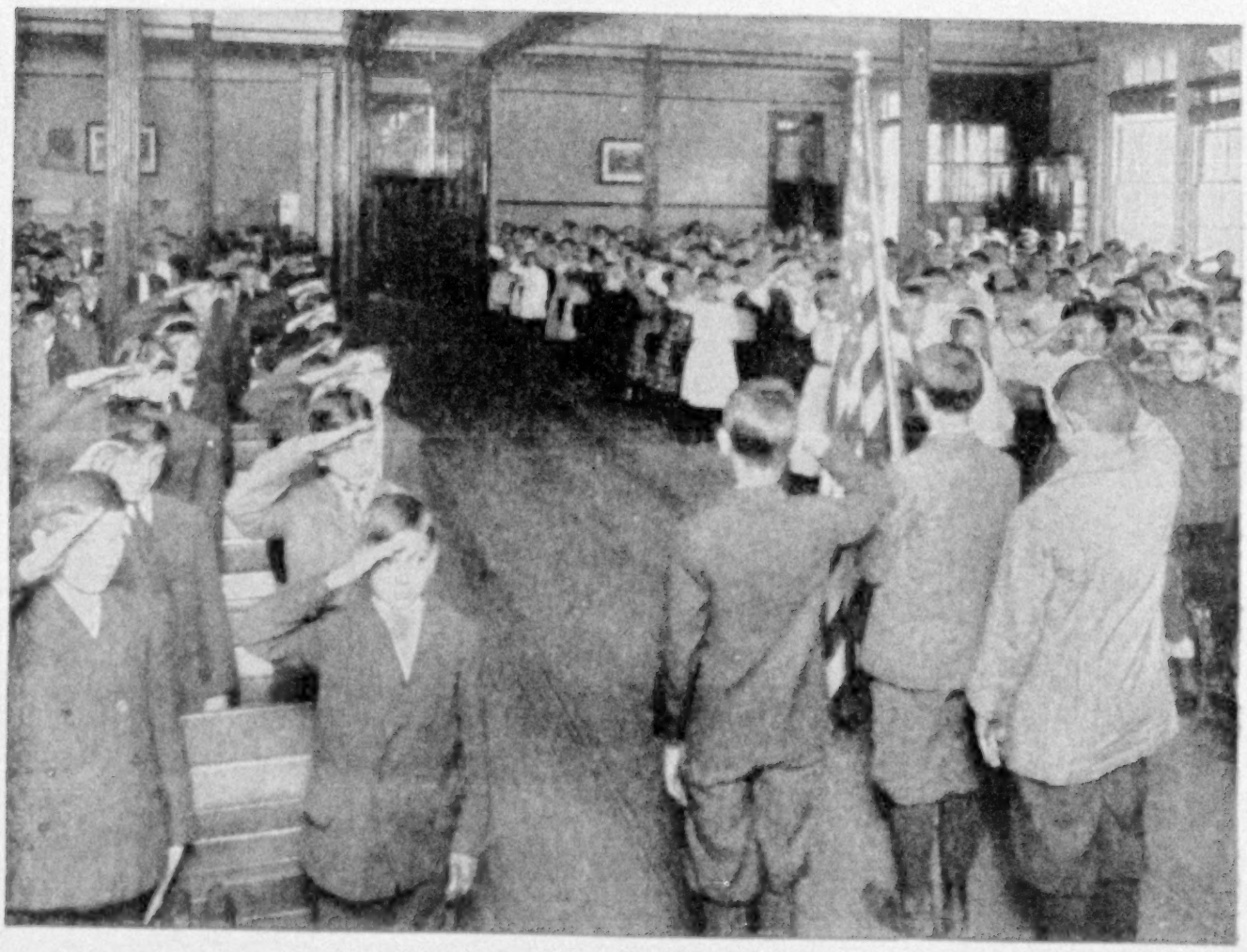

YOUNG AMERICA SALUTES ITS FLAG

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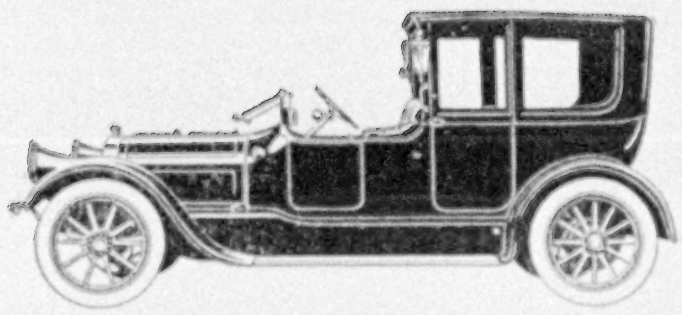

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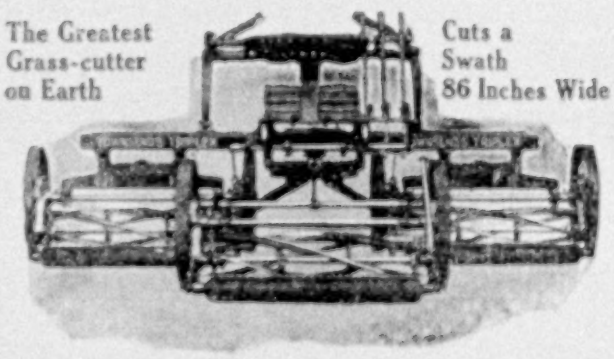

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THE NATIONAL GEOGRAPHIC MAGAZINE

NEW YORK—THE METROPOLIS OF MANKIND

BY WILLIAM JOSEPH SHOWALTER

AUTHOR OF "THE PANAMA CANAL," "HOW THE WORLD IS FED," "STEEL—THE NATION'S GREATEST ASSET," ETC.

This is the first of a series of articles concerning the principal cities of the United States which will appear from time to time in the NATIONAL GEOGRAPHIC MAGAZINE. *In word and picture these articles will tell the story of what these cities are today, what problems they are facing, what futures they are planning, and what rôles they are playing in the nation's activities.*

WITH German submarines creeping up to the very portals of its busy harbor, with precautions being taken lest on some unguarded, moonless night an enemy hydro-airplane, laden with bombs of destruction, descend upon it out of the sky, the eyes of the whole world are focused upon New York. A city which the great war has made the earth's international trade center and civilization's crowning metropolis, Gotham now commands a new interest, arouses a new pride in its achievements, excites a new feeling of wonder, and stirs in every American breast a realization that it is a city of all the people, national in all its aspects and relations.

Conspicuous above every other phase of its greatness, of course, is its rôle as an international trade center. Last year exports passing out of its harbor had a greater value than the combined exports of Asia, Africa, and Australia. The imports coming through its customs lines exceeded in value those of the continents of South America, Africa, and Australia together.

For such operations as these, New York, perforce, must be a great metropolis. In population it outranks any one of half the nations of the earth, surpasses that of the entire continent of Australia, and matches the combined strength of the six westernmost States of the American Union. In annual expenditures it exceeds all except seven of the fifty-odd nations on the map. Its water system could supply the whole earth with drinking water, and its storage reservoirs hold enough to slake civilization's thirst for more than a year. Its electric transportation lines carry nearly twice as many passengers in twelve months as all the steam railroads of the United States. They could give every man, woman, and child living a ride every ten months—so much for the yardstick of comparison.

THE MAJESTY OF THE CITY'S SMALL THINGS

New York is of all cities the one where the majesty of small things is regarded as well as the greatness of large ones.

Who counts a nickel? Yet the greatest transportation system of the ages was built by nickels prospective, and lives on nickels realized. Who reckons a dime,

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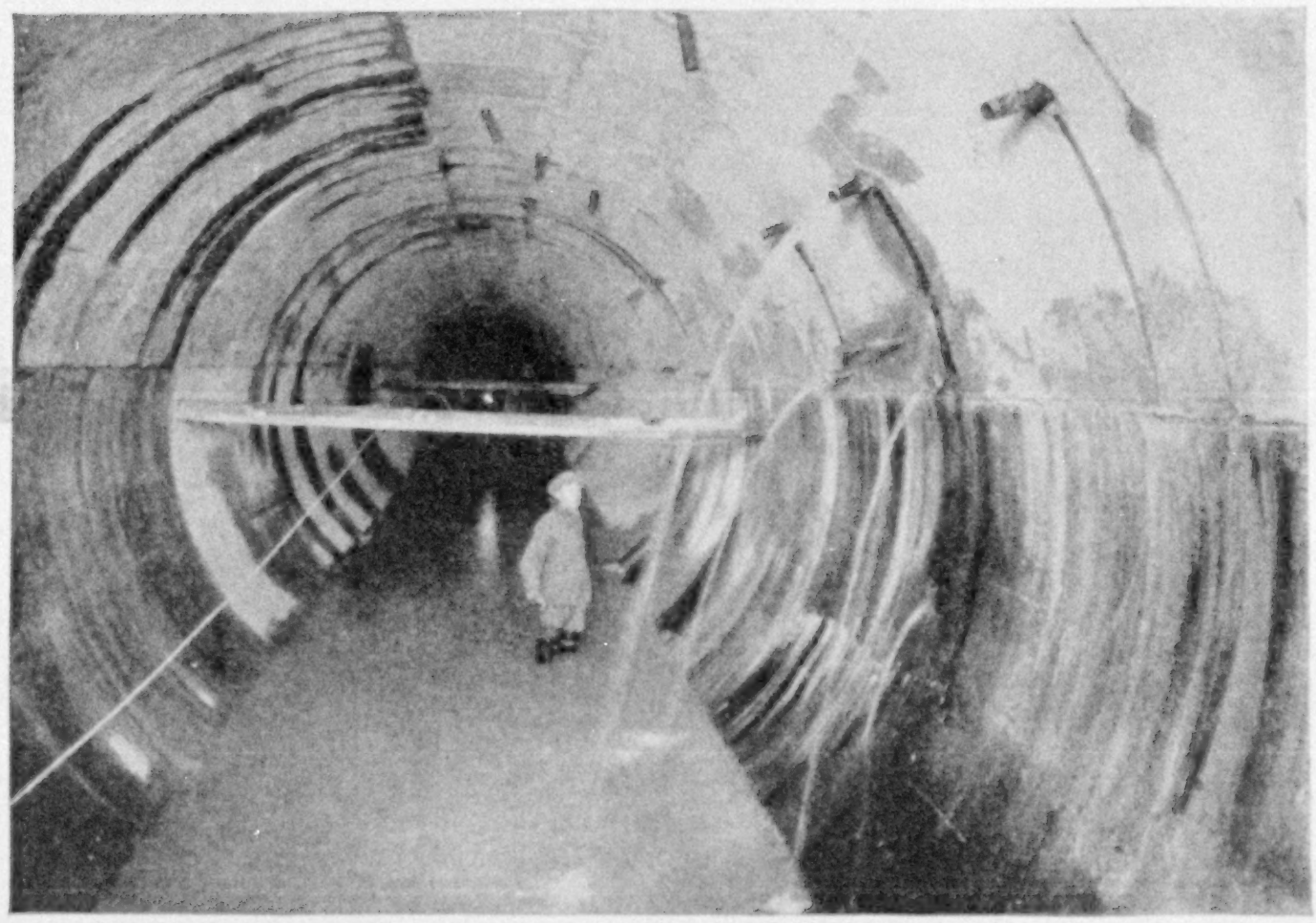


Photograph from Edwin Levick

A SECTION OF THE BIG TUNNEL THROUGH WHICH CATSKILL WATER PASSES UNDER NEW YORK

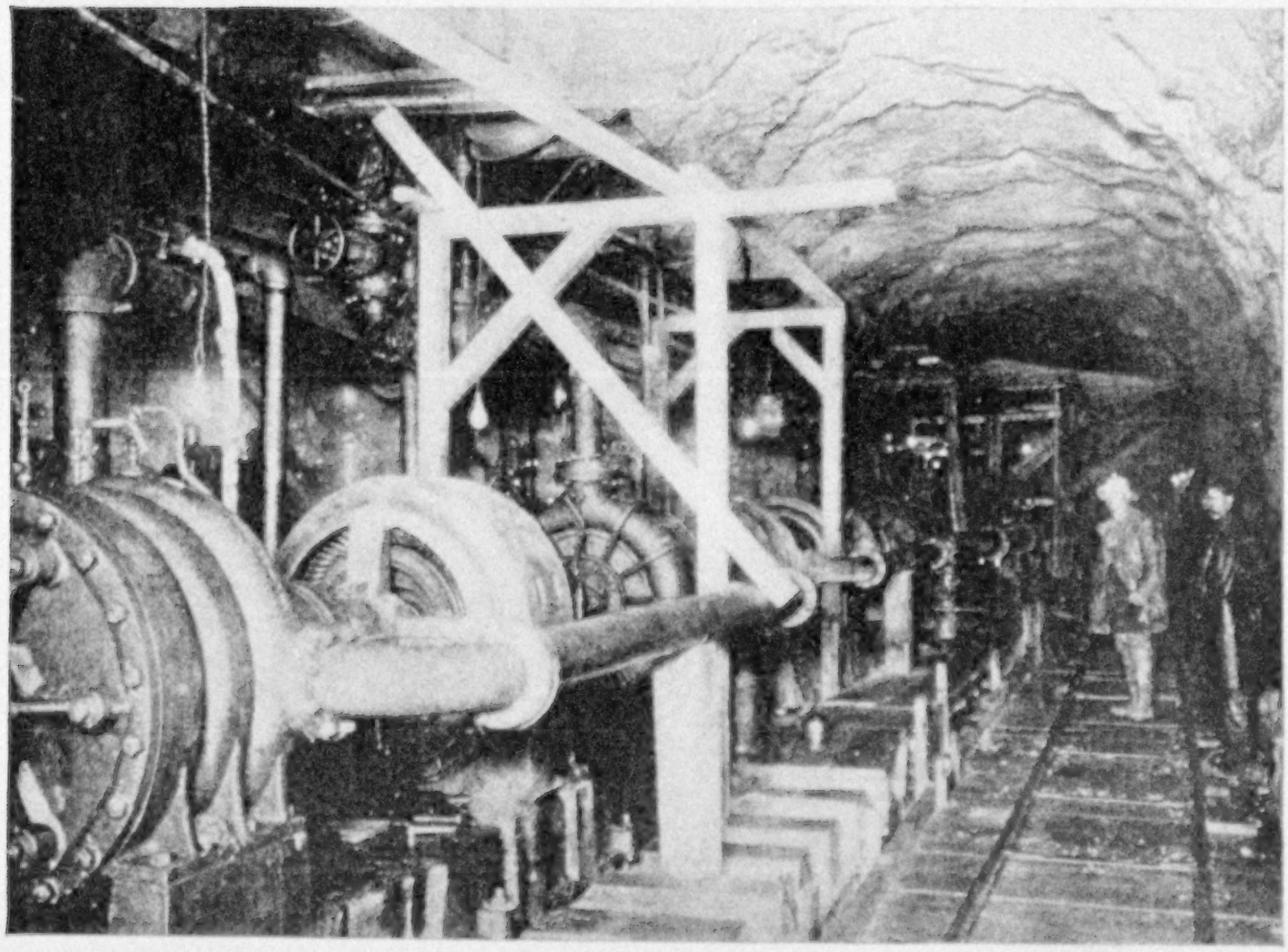
The man in the middle distance gives some idea of the tremendous size of the stream of water required for New York. The small streams flowing in are from underground springs. These were ultimately dammed back by grouting placed between the concrete lining and the solid rock.

which even the waiter in a quick-lunch room scarcely deems worth a "Thank you"? Yet the world's loftiest building, its crowning cathedral of commerce, was built out of the small margin of profit in ten-cent transactions. Who considers the dust in the street? New York has built up sixty-five acres of ground, valued at several million dollars, out of street sweepings. Who feels the dust and dirt that adhere to his shoes? However, more than seven tons of the housewife's enemy is carried by tramping feet into the subways every twenty-four hours.

THE COSMOPOLIS OF CIVILIZATION

One scarcely knows which to wonder at most—New York, the cosmopolis of civilization, or New York, the metropolis of the western world. It has more Irish and their sons and daughters than Dublin, more Italians and their children than has Rome, as many Germans and their children as Leipzig and Frankfort-on-Main together, while its Russian population by birth and parentage is greater than the combined populations of Riga and Dvinsk.

But New York's appeal is as much to the people of the United States as to those of the outer world. Glancing at the list of those born elsewhere whom Uncle Sam found living in the metropolis when he last counted noses, we discover that there are more Jerseyites in Gotham than in Passaic, Princeton, and Rahway combined; more Connecticut-born than in Danbury; more people of Massachusetts birth than in Taunton; more Ohioans than in Chillicothe; more Pennsylvanians than in Allentown or Altoona. Every State sends a quota of its people to become part and parcel of New York life, and perhaps a majority of the city's most



Photograph by Paul Thompson

KEEPING A TUNNEL SECTION OF THE CATSKILL AQUEDUCT FREE OF WATER

In excavating the tunnels for this aqueduct, thousands of underground springs were encountered, and electric pumps had to be installed to prevent accumulated water from interfering with the progress of the work.

influential people were born outside its limits.

THE NIAGARA OF AMERICAN LIFE

New York is indeed the Niagara of American life. As over the great falls the waters of the continental basin rush down to the Atlantic Ocean, so through this city passes the vast river of humanity that seeks the sea of opportunity in the world beyond. It has been said that standing at 42d street and Fifth avenue long enough one will see every American who does a worth-while thing pass that busy corner. Certain it is that all the currents of human achievement in America do flow in that direction.

Below the falls is the whirlpool. As one stands above Niagara's gorge and watches the swirling waters, seemingly bereft of all sense of the direction where lies the sea, he wonders whether they will ever break the spell of the moment and find the channel they seek. So, also, standing at the vantage point of Times Square and watching the confusion of the rush hour, with its swirl, its eddy, and its drift, the onlooker marvels that in every drop in this whirlpool of humanity there is purpose.

Any story of New York begins with its people, and in its vast aggregation of humanity there is a wealth of interest.

Let those who have been pessimistic about our immigration study New York. It seems unbelievable; but if every resident whose parents were born in America were to leave the city its standing as the second most populous center in the world would not be affected. In other words, the number of immigrants and their children resident in New York is almost equal to the combined populations of Paris and Philadelphia and greater than the combined populations of Chicago and Berlin.

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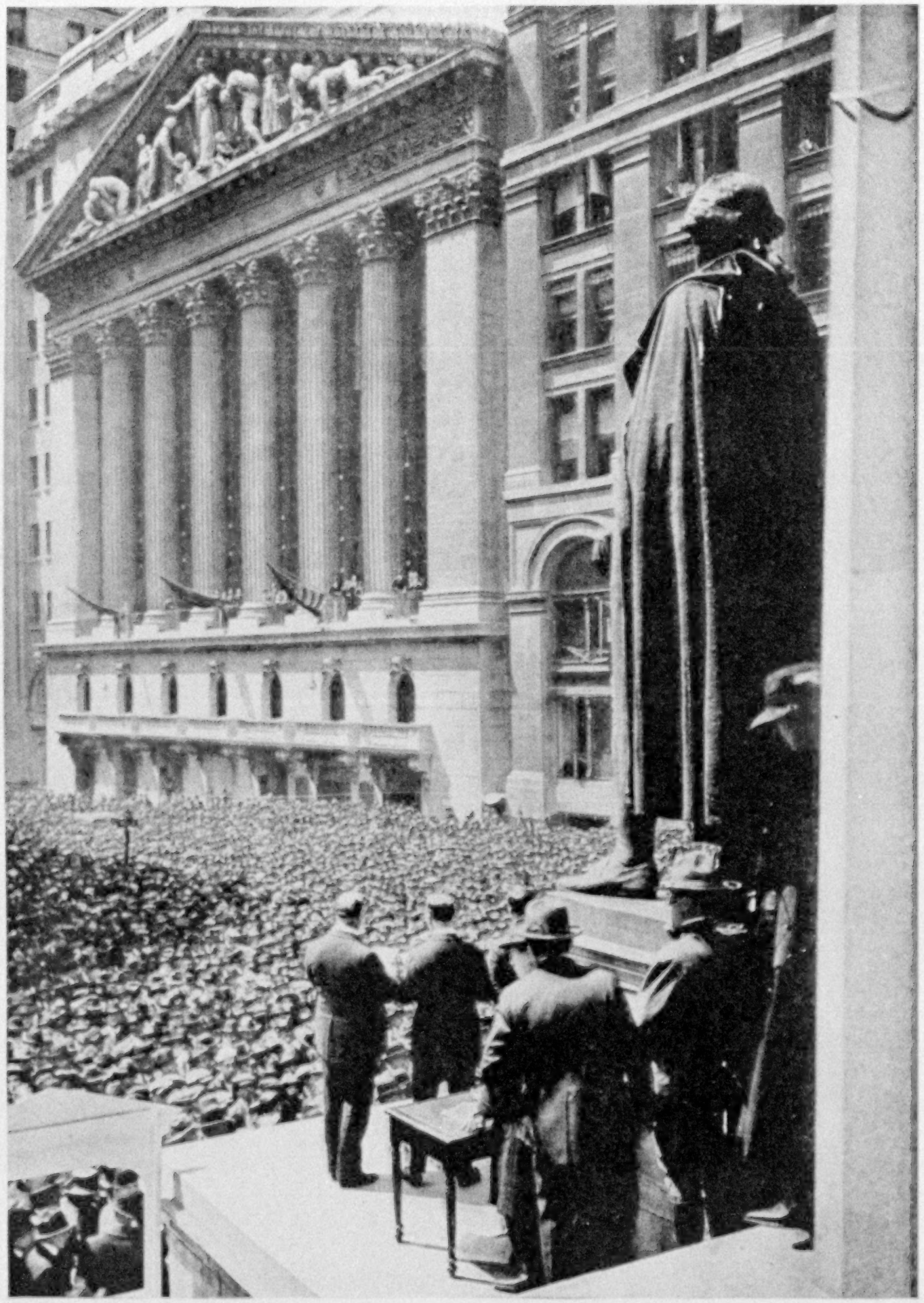

Photograph from Brown Brothers

THE NEW YORK STOCK EXCHANGE FROM THE STEPS OF THE SUBTREASURY DURING A LIBERTY-LOAN CAMPAIGN

A few figures will show the vast proportions of everything that relates to life in New York. Four transients arrive every second, a passenger train comes into the city terminals every fifty-two seconds, and a ship clears every forty minutes. A child is born every six minutes, a wedding takes place every thirteen minutes, and a funeral is held every fourteen minutes. There is a real-estate transfer every twenty-five minutes, a new building is erected every fifty-one minutes, and a fire occurs every thirty minutes. Every day three hundred and fifty people come to the city to live, and a hundred new telephones are installed.

Photograph by Social Press Association

FIGHTING THE BIG GRAIN FIRE AT DOW'S ELEVATOR, BROOKLYN, NEW YORK

High-pressure service in the downtown district in New York has all but banished the modern big fire. Giant electric pumps, capable of delivering thirty thousand gallons of water a minute, at a pressure of three hundred pounds to the square inch, represent the "big guns" of the fire department. Under such pressure windows are smashed in, partitions are torn down, merchandise is swept aside, and water is driven into every nook and cranny of a structure afire. The ten pumps of the high-pressure service can deliver a hundred streams at once. Veritable walls of water check a fire's effort to spread. Only a negligible number of the city's forty fires a day get beyond the buildings in which they originate.

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Photograph by Paul Thompson

THE WOOLWORTH BUILDING

Rising 785 feet above the sidewalk, possessing forty acres of floor space, and having elevator shafts with a combined length of two miles, the Woolworth Building well fits its rôle of tallest building in the world. One of its chief successes is, according to architects, its scale. The architectural adornments which, viewed from the street, look like delicate and elaborate embroidery in stone, do not become coarse or crude when seen close at hand. One authority calls this civilization's greatest cathedral of commerce and another the world's foremost temple of trade. That it is both a beautiful and a substantial structure no one who has ever seen it outside and in will controvert.

© Kadel & Herbert

CONGESTED TRAFFIC ON FORTY-SECOND STREET: NEW YORK CITY

This view of a jam at Fifth avenue and Forty-second street shows what a tremendous task the New York traffic policeman has to encounter. One who stands for an hour at a busy crossing like this and watches an officer keep order from descending into chaos knows that in Gotham there is efficiency both high up and low down. Often there is more journalistic space devoted to one stray deed of one stray policeman than to the ninety and nine good deeds of the ninety and nine earnest guardians of the law who remain in the fold of conscientious service.

Three people out of every four in the great metropolis were born under alien flags or are the children of the foreign-born. But who that has studied the situation can gainsay New York's Americanism?

The story of how the one-fourth of the city's population that is of native ancestry has Americanized the three-fourths that is foreign in birth or parentage is revealed in the schools.

He who studies at first hand the processes of Americanization and citizen-building finds work being done which would stir the heart of the most unemotional observer. He realizes that all of

Photograph by Paul Thompson

THE SOAP-BOX ORATOR AND HIS AUDITORS

In no other city does the sidewalk Demosthenes thrive so well as in New York, and in no part of New York so well as in Madison Square. He is always against things as they are. His doctrines are those of the Bolsheviki, and his remedies would undoubtedly be worse than the disease; but he always commands an audience and never passes the hat.

what is called New York's politics, stories of graft and the like, are but the froth and foam which fleck the waves of the city's life, while beneath runs a deep current of progress and public spirit, which takes form in carefully conceived and splendidly executed health laws, in a school system that has accomplished wonders, in a water system surpassing anything of its kind on earth, and in a hundred and one other ways not quite so dramatic as the printed stories of its politics and graft, but none the less full of human interest.

THE PUBLIC SCHOOLS

Along with many other cities, New York long since learned that a vast majority of the children who attend public schools do not go to college afterward.

Photograph by Paul Thompson

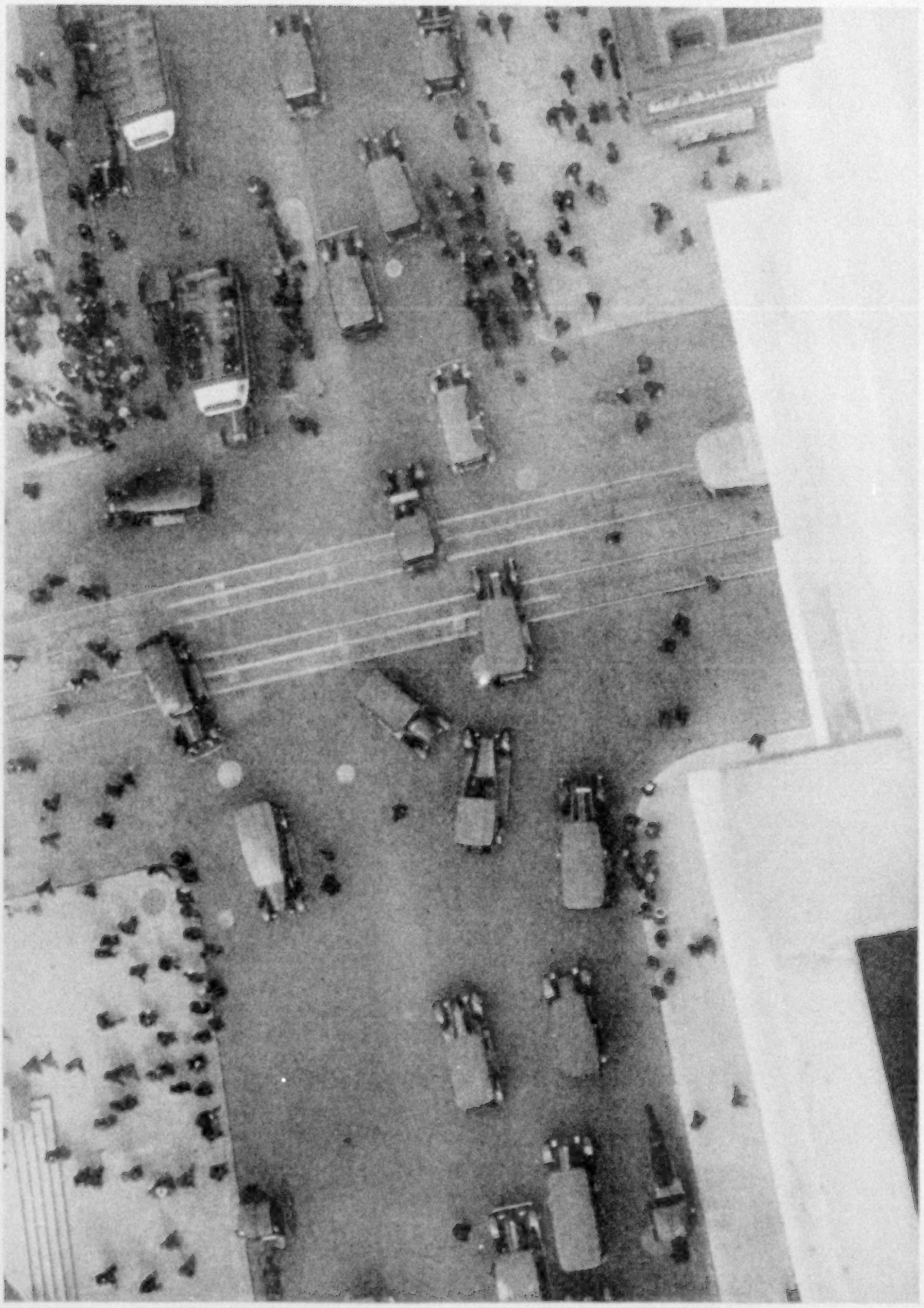
GARMENT-WORKERS PARADING DOWN MADISON AVENUE: NEW YORK CITY

Thousands of such humble folk as these find habitations in brownstone fronts that once were homes of the rich. The rich, fleeing with the approach of business, went uptown and duplicated their downtown brownstone fronts, and so millionaire mill-owner and poor garment-worker may live alike behind a brownstone front, the one above Fiftieth street and the other below Twenty-third.

In times gone by all elementary education was planned to fit boys and girls for colleges, and those who couldn't continue in the appointed channel found themselves half fitted for college, but not at all fitted for life. Then some one proposed that boys and girls whose education was almost certain to be limited should spend their school days preparing for their life work rather than for the college they would never be able to attend.

From that suggestion developed the idea of vocational education, which is now accomplishing wonders. Perhaps more than any other one agency, it is helping to transform in heart and action the alien life of the metropolis into part and parcel of our body politic. The immigrant's children are being fitted for that economic independence which comes with skilled hands instead of being sent forth from school with untrained hands and poorly trained minds.

A day spent in visiting New York's prevocational and vocational schools gives one much heart and hope. Go with me down on the lower East Side, where the tenement flourishes in all its fabled glory, and visit a prevocational school.



Photograph by Kadel & Herbert

FIFTH AVENUE AND FORTY-SECOND STREET CROSSING

"Step lively" is the spirit of New York. The crossing policeman wants you to do so, the crowd steps on your heels if you do not, and the subway car door goes shut in your face if you are slow; for New York is too big to wait for anybody. One who lives there must be in a hurry, and the drones, whether in business, going to Coney Island, strolling up Broadway, or wherever they may be or whatever their circumstance, are always in people's way. This unusual photograph was made from a building opposite the Public Library.

Here we see children studying the things we studied in the little red school house, with touches of nature added here and there. There is a constant effort to grade the boys and girls, so that each child finds full scope for his capabilities.

The backward children are withdrawn from the regular classes, as are also the especially precocious ones. To go into a class-room where the precocious kiddies hold sway is to see a lot of high-school heads on sixth-grade bodies. It seems almost uncanny to hear such youthful pupils discussing the relations of Japan to the Siberian situation or America's attitude in the matter of after-the-war trade.

THE MANUAL-TRAINING COURSES

When the average boys and girls reach the age of thirteen, they are ready to take up something beside text-books. Aiming alike to prevent square pegs from getting into round holes and to lay the foundations for life training, the prevocational school has many lines of work for boys and girls.

In a boy's department are to be found courses in machine-shop activities, in sheet-metal work, electric wiring, plumbing, woodworking, mechanical drawing, sign painting, garment designing, and printing. Each boy has a number of metal tags like those used in every modern machine shop. These are given in exchange for the tools they desire and are claimed when the tools are returned.

The boys take three courses, which they select with the aid of their teachers. For the fourth term they go back to the one in which they desire to specialize. While they are taking these courses all book work is planned to dovetail with the handwork both in subject-matter and in hours. The sheet-metal worker's arithmetic will deal with sheet-metal workers' problems, and the electric wiring student's science will involve basic electrical principles. The girls' departments have courses in dressmaking, millinery, homemaking, etc.

When the children finish their work in the prevocational schools, some of them drop out, but most of them go to the vocational schools, where they carry on the course already begun. These are high schools, training hand and mind together, and fitting the pupils for their life work.

A boy who finishes the plumbing course at the Vocational School for Boys is a real plumber, and the boy who puts up his building and wires it with every known sort of wire installation can give pointers to many a man who has spent a quarter of a century as an electrician.

FITTING GIRLS FOR LIFE'S RESPONSIBILITIES

For girls, vocational education reaches its highest expression at Washington Irving High School. Here one sees a combination of head, heart, and hand training that transforms the tenement child into a young woman who possesses poise, who has a keen, alert, straight-thinking mind, who knows the responsibilities of life, and who has been imbued with a spirit of high patriotism, right purpose, and clean living.

To teach 5,600 girls every day, to train them in mind and body as Uncle Sam is training his armies at our soldier cities, is a great task. To take that many immigrants' daughters and make them orderly, as jealous of the school's discipline as if they were its responsible head, quiet and dignified in lunch-room, class-room, and corridor, gracious as hostesses to visitors and in their auditorium work, and as patriotic as if every line of their descent lay through Williamsburg or the *Mayflower*—that is a work inspiring in its proportions and rich in its results.

With its motto the three big "I's" of life—Intelligence, Industry, Integrity—Washington Irving High School truly educates head, hand, and heart. A four-year academic course, a four-year librarian's course, a three-year commercial course, a three-year dressmaking and costume-designing course, and a three-year industrial arts course are provided.

Go down into the big auditorium and see several hundred girls in a war-savings stamp meeting, and watch them on the stage making posters. Many a veteran "chalk-talk" artist would envy their work. In the design-drawing work the Washington Irving girls produced last winter successes in commercial art that will be in evidence all over the United States before a year has passed, for merchants and manufacturers in search of

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Photograph by Kadel & Herbert

FIFTH AVENUE LOOKING NORTH FROM FORTY-SECOND STREET

This great thoroughfare has been preëmpted by Fashion and the Shopper. Heavy traffic is rigidly excluded.

new ideas purchased from this source designs for wall paper, rugs, print dress-goods, etc., and were delighted to obtain them.

THE PREPONDERANT FOREIGN ELEMENT IN NEW YORK'S SCHOOL ARMY

When one reflects that seven out of every nine children of school age in New York are of immigrant parentage, a situation is disclosed that might be termed startling, especially when it is remembered that the school army of Greater Gotham is so large that if it marched ten abreast in close formation the front rank would be boarding a North River ferry-boat when the rear guard was crossing the Schuylkill out of Philadelphia.

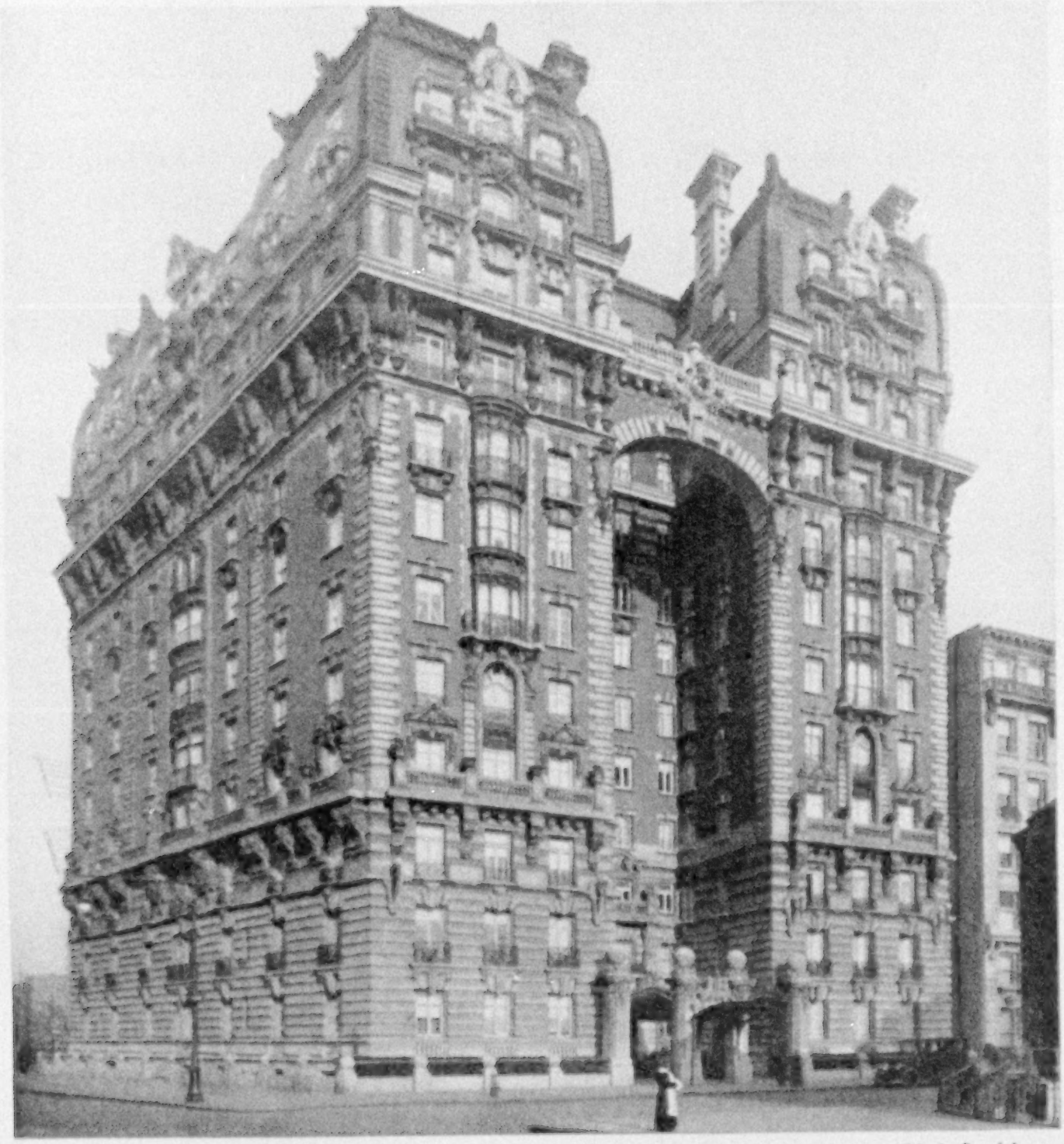
It is a staggering task which confronts the city in Americanizing such huge numbers of youthful foreigners. Indeed, did it not happen that New York is so rich—with assessed values greater than those of the next seven cities in America combined—it might well call upon the national government for aid. But with such wealth it is bearing the burden alone and is doing it admirably.

One might go on to the length of a whole article writing about striking features of the New York public schools, which stand first among all the agencies for Americanizing the immigrant's children. How these schools take seventy-odd tongues and substitute good English; how they not only labor to fit boys and girls for intelligent and useful places in the country's great industrial system, but also through employment bureaus bring the trained pupil and the open job together; how they provide every year for the children of an added population equal to that of Memphis, Tennessee—none of these achievements or problems can be described here.

NEW YORK'S GUARDIANSHIP OF THE PEOPLE'S HEALTH

Next to the education of its children for their life work and the maintenance of order, a community's most important task is to care for the public health. And here again the big city shines.

If there ever was a city on the face of the globe which to superficial judgment



Photograph from Edwin Levick

A MODERN APARTMENT HOUSE OF THE TYPE PREVAILING ALONG RIVERSIDE DRIVE

Nearly four million people live in "tenements" in New York, for under the law a "tenement" is anything from one of the frowsy seven-story affairs in the lower and poorer East Side, overrun by poor children, to the fashionable apartment house on Riverside Drive, open only to tenants who have big bank rolls but no children.

would seem a paradise for all the germs in the catalogue that city is New York. From every continent, every clime, and every country have come its inhabitants. For the most part those who come from foreign lands are as ignorant about the germ theory of disease when they arrive as a primary pupil is ignorant about differential calculus.

Every one knows that crowding tends to magnify the problem of public health. "Too thick to thrive" is an alliterative phrase which diagnoses the health situation in many an overcrowded population center. When it is remembered that on the average square mile in Manhattan there are nearly as many people as in the whole State of Nevada, and that down

Photograph by Paul Thompson

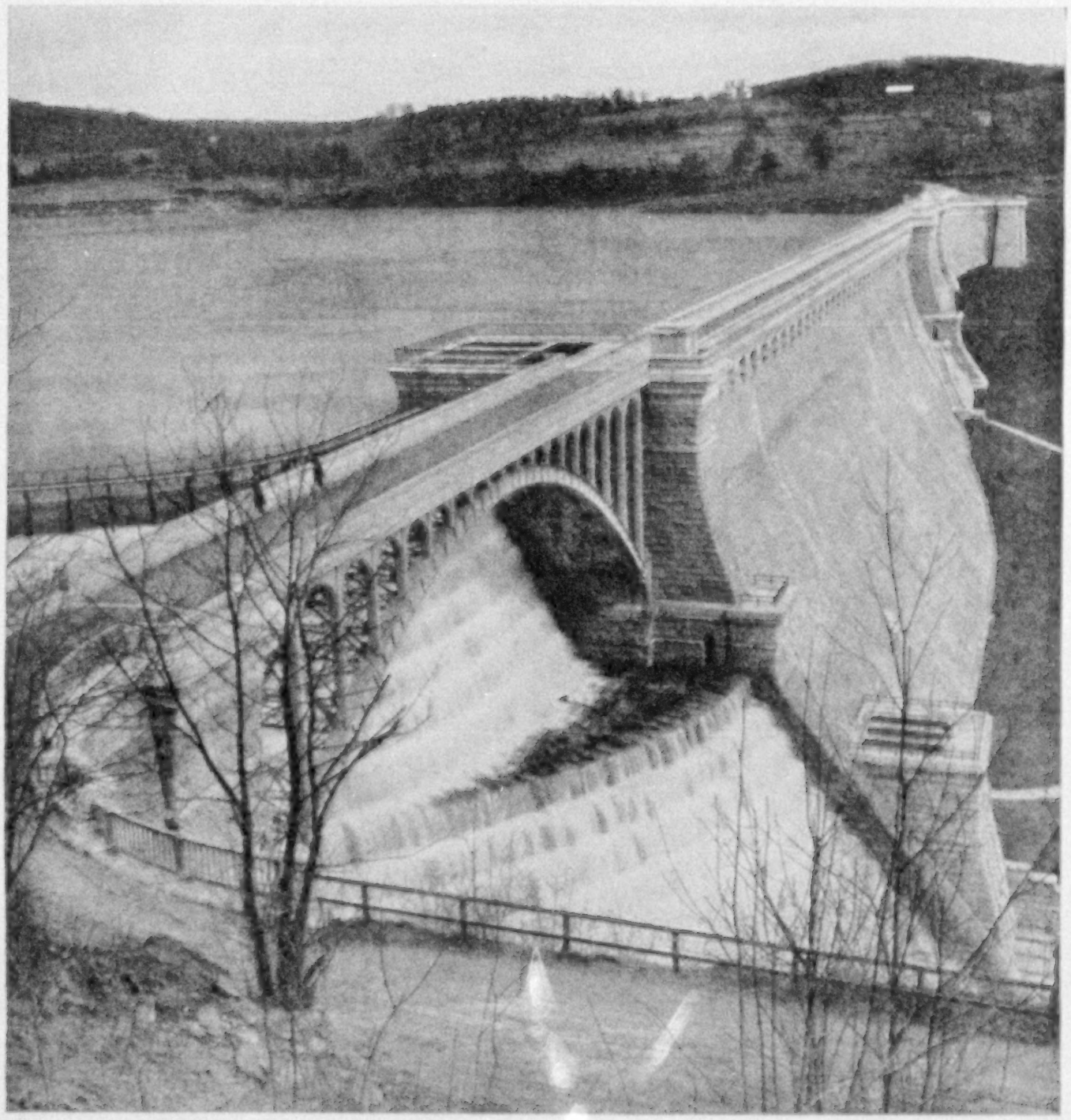
THE CURB MARKET IN BROAD STREET: NEW YORK

A section of the street is roped off, and within this area, on stirring market days, there gathers one of the most wildly gesticulating crowds imaginable. They are the curb brokers, who buy and sell securities, most of which are not listed by the more conservative exchanges. In the squat little buildings in the foreground are the offices of many of the curb brokers, and the sign-language that passes between windows and street is as eloquent in its unintelligibility to the looker-on as it is in dollars and cents to the participants.

Photograph from S. H. Macfarlane

ONE OF NEW YORK'S GREAT HOTELS

This structure is reputed to be the largest hotel in the world. It has 1,700 rooms. The metropolis has half as much invested in hostelries as Uncle Sam invested in the Panama Canal. Within a single square mile there are enough hotels to house and feed 50,000 people. They employ three people for every five they entertain. No other great city receives so many sojourners, who are both able and willing to pay for every creature comfort; and there is no taste so expensive that a Gotham hostelry cannot fill its demands. Every night the food and drink bill of the hotels and restaurants amounts to more than a million dollars.



Photograph from Edwin Levick

THE CROTON DAM AND SPILLWAY OF THE NEW YORK WATER SUPPLY

The Croton water system, which was New York's main reliance before the Catskill waters were tapped, is not small, even for a big city. There are probably not fifty cities on the globe for which it could not furnish an adequate water supply. But for New York it became so inadequate that the city was face to face with a real water famine repeatedly.

in the East Side the population is many times as dense, the wonder is that it is possible to prevent the city from being a pest hole, with every infectious disease endemic, from anthrax and ague to typhus and cholera. Furthermore, the elevated, the subway, and the surface lines would seem to afford unexampled opportunity for the spread of disease.

But in spite of these conditions, New York is one of the healthiest cities in America. Compare Manhattan's 1916 death rate of 13.60 per thousand with Baltimore's 18.18, or Washington's 18.01, and it will be realized that to offset its overcrowding, its East Side ignorance, and its vast daily intercourse, New York has a health service second to none in the world. Nowhere else is there to be found a more splendid tribute to the success of

© Keystone View Company

NEW YORK SKY-LINE FROM JERSEY DOCKS

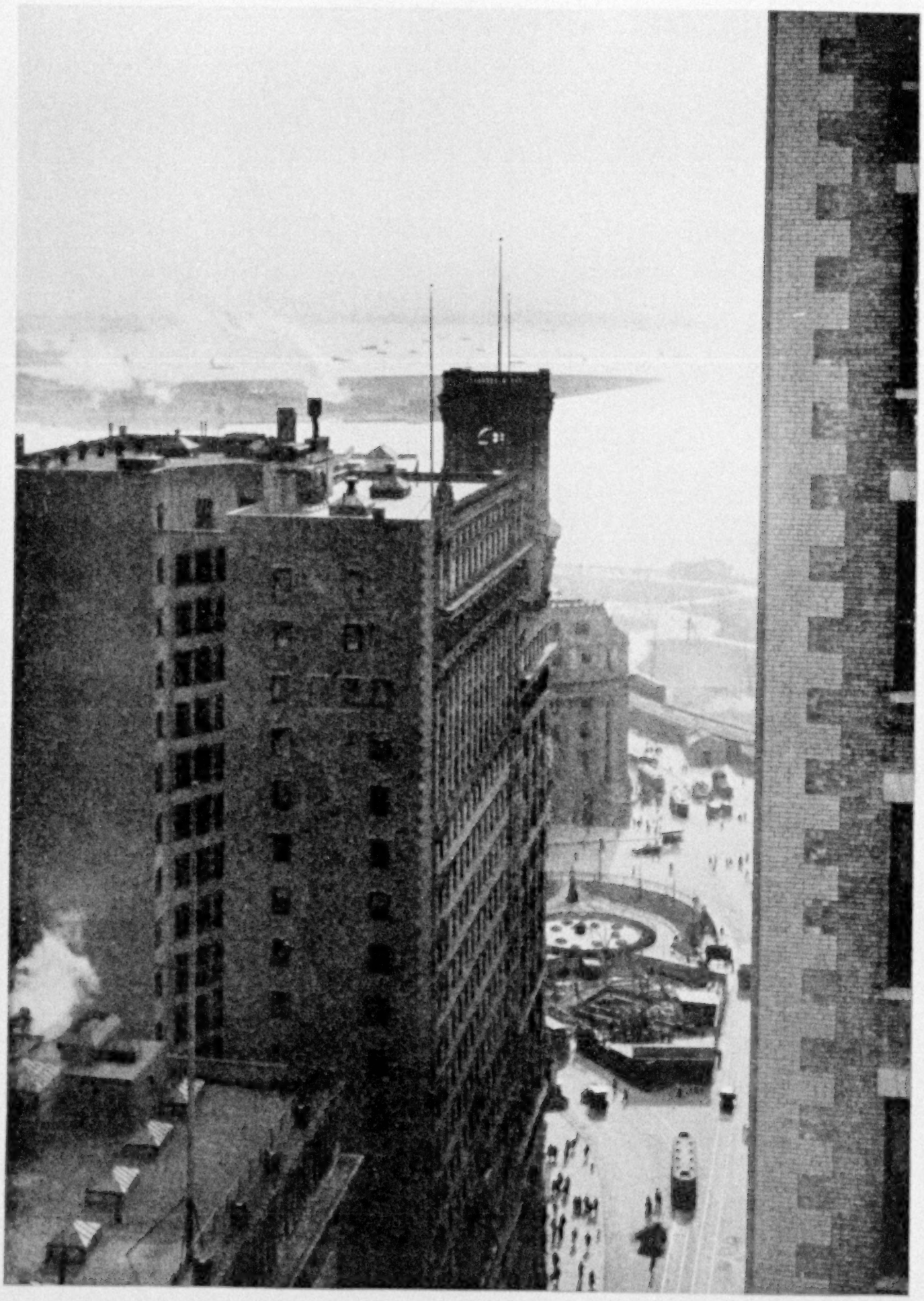
It has been said that there is no wave on the sea of world commerce but sends a ripple to London. Equally true is it that no land suffers without bringing a pang of pain to New York's heart, for all countries have contributed of their peoples, and all lands of their tongues, to make this the modern Rome toward which all roads of migration lead.

preventive medicine in combating "catching" diseases than in the metropolis.

INCREASING POPULATION, DECREASING DEATH RATE

Since 1865 New York territorial expansion has been important, but the increased population per block has been even more noteworthy. Increasing density of population always means multiplying problems of sanitation, but the health authorities have met every such increase with a decrease of death rate.

There were proportionately only half as many deaths from pulmonary tuberculosis in the decade from 1906 to 1915 inclusive as there were from 1876 to 1885. There were only one-third as many deaths from typhoid, one-fifth as many from diphtheria, one-sixth as many from scarlet fever, and only half as many deaths of babies under one year of age.



Photograph by Paul Thompson

LOOKING DOWN LOWER BROADWAY, ACROSS THE BATTERY, BOWLING GREEN, AND GOVERNOR'S ISLAND, TOWARD AMBROSE CHANNEL AND THE SEA

The New York of the society novelist may be found if one seeks such things, as is the case with every cosmopolitan city. But the New York that makes the education of its youth its first concern, that spends millions for public recreation, that possesses one of the lowest death rates in the world for cities of more than a million people, that in normal years absorbs a hundred thousand foreigners into its body politic—that New York is too prosaic for sensational stories, and so the world's attention is focused upon the one withered petal of human frailty rather than upon the beautiful blossom of civic achievement.

Was there ever more striking evidence of the immense contribution which the science of sanitation makes to the welfare of mankind than those figures? With every element of natural conditions in New York tending to promote the spread of diseases, the health officer has not only held them in check, but has reduced their harmful power to a half, a third, a fifth, and in one case to a sixth of their former potency.

Such a tremendous success in the mastery of "catching" diseases—under which term I include those that are infectious with those that are contagious—forms an epic in human progress.

There are enough babies born in New York City every year to populate four cities like Charlotte, North Carolina, Oshkosh, Wisconsin, Roanoke, Virginia, Hamilton, Ohio, or Springfield, Missouri. As many people in New York die annually as live in four cities like Elkhart, Indiana, Leavenworth, Kansas, Beverly, Massachusetts, or Raleigh, North Carolina. So many births mean an unrelenting fight and eternal vigilance to keep down infant mortality.

THE PRICE OF HEALTH

New York has found, in the words of its Commissioner of Public Health, that it is possible to purchase public health. He maintains that the health officer of a progressive American municipality should not be limited, even to the smallest fraction, in the service or funds necessary in his work any more than the builder of a suspension bridge should be expected to provide a safe span with three cables instead of the four which conditions demand. "Within natural limitations," says this authority, "a city can determine its own death rate. Health insurance is as reliable and profitable an investment for the municipality as it is for the individual."

New York's chart shows how the general death rate has been hammered down and down under the application of modern methods. In 1874, 27.90 people out of every thousand died—a normal year for those times. In 1917, 13.76 out of every thousand died. In other words, New York is saving about 80,000 lives a year through the application of the laws of scientific sanitation.

Eternal vigilance is the price of health in a congested community like New York. No man may keep a stable without a permit, and no permit is forthcoming until thorough provision against flies and filth accumulation has been made.

The water supply is carefully watched and samples frequently analyzed to make sure that the city never drinks a mixture of disease germs and water, as so many municipalities do. Even the water-boats which deliver drinking water to ships in the harbor, the bottled waters that are sold, the drinking waters on railroad trains and river steamers are constantly under the scrutiny of the department.

The mosquito is fought as assiduously here as it was at Panama. Rats are guarded against; the ordinance against common towels and drinking cups is rigidly enforced; and in a hundred ways the health department makes the city inhospitable to the germ army that ever seeks a foothold in hapless human systems.

The activity of the health department which has the most widespread appeal, however, is the work of the Bureau of Child Hygiene. More than 140,000 visits of the stork occur annually, and to give the little pilgrims a chance to grow up and become useful Americans is one of the city's principal concerns. Only two decades ago one out of every five of the tiny kiddies lost the hard fight against the diseases of infancy before it was a year old, and went to tenant a tomb instead of living to gladden a home. Today, however, with the health service as its ally, the baby army goes marching on, losing only one out of ten of its number.

GUARDING THE CHILD'S MILK SUPPLY

Knowing that the germ army attacks the child army mainly through the milk supply, some sixty infant's milk stations are maintained, and here the mothers of the children come for wholesome milk and for instruction. The first thing taught is that the breast-fed baby has a much better chance to win its battle for existence than the one fed on cow's milk, and thousands of mothers are thus induced to give up their intention of rear-

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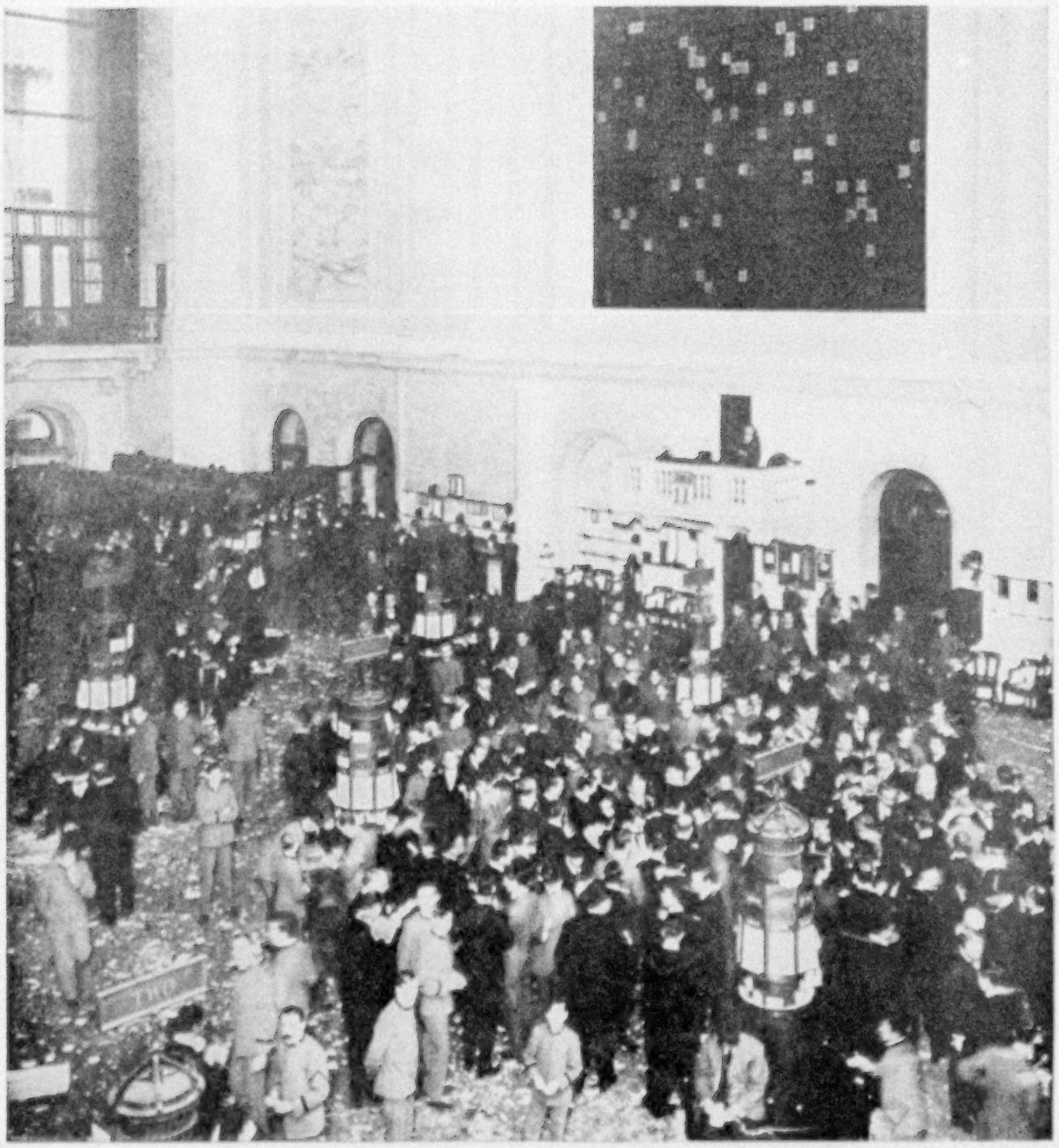
Photograph by Paul Thompson

INTERIOR OF THE GRAND CENTRAL STATION: NEW YORK CITY

Every day some three hundred thousand passengers arrive and depart through the railroad stations of New York, where nearly one-fifth of the railroad mileage of the United States finds a seaboard terminal. Such tremendous crowds call for vast stations. The Grand Central Station, covering 79 acres of ground, has public rooms where 30,000 can be accommodated at a time without crowding. During its construction the eight hundred daily trains, conveying 100,000 passengers, continued to enter the old structure on the same site.



© Helen D. Van Eaton

WHERE BULLS AND BEARS FIGHT IT OUT, WITH LAMBS AS INNOCENT BYSTANDERS: THE "FLOOR" OF THE NEW YORK STOCK EXCHANGE

It is asserted that no other feature of the newspapers of the world is so widely read as the New York financial column, which deals principally with happenings that have their inception in this big room.

ing their children as "bottle babies." Nearly 50,000 kiddies visit the milk stations every year and disease germs have a hard road to travel to get into their milk.

The health department endeavors to get into touch with the mothers in the poor districts as early in the prenatal period as possible, and by its visiting nurse service gives the babies the boost of a proper advent into the world. After a baby is born, it is visited every other day at first, then twice a week, and finally is sent with its mother to the milk station. Under such a course only 26 babies out of each 1,000 die during their first month on earth, as against 36 where this policy is not followed.

After the milk-station stage on the battlefront of existence, the child moves up past the children's clinic to the public

Photograph by Paul Thompson

NEW YORK SCHOOL BOYS AT A MUNICIPAL PLAYGROUND

The school army of New York is 900,000 strong. Five out of seven of its soldiers were born under alien flags or else have a parent who was. Marching ten to a file, in close formation, the vanguard of the splendid army of future citizens would be coming into New York as the rear guard was passing out of Philadelphia.

Photograph from the New York Edison Company

THE NEW YORK CITY HALL AT NIGHT

New York, with an annual budget of two hundred million dollars, spends more for municipal purposes than Canada spends for dominion purposes in peace times. Yet so great is its wealth that the tax rate is less than two dollars per hundred of assessed value.

school, and here undergoes medical examination at frequent intervals. Adenoids are no longer permitted to retard its growth and mental development, bad tonsils are removed, defective teeth are cared for, and the poor child is given an equal chance with the child of the well-to-do to grow up into a healthy, normal adult, girded with physical well-being and mentally equipped for the warfare of human progress.

The work of food and drug inspection, laboratory research, and other activities might be discussed, but it is enough to say that if "by their fruits shall ye know them," then the New York health service has exhibits to offer which splendidly demonstrate what a municipality can do toward promoting the well-being of its people.

Facing a density of population unequalled anywhere else, dealing with peo-

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Photograph by Paul Thompson

THE HUDSON RIVER AND ITS MANHATTAN AND JERSEY SHORE DOCKS

This striking picture, taken from the Woolworth Tower just after a snowstorm, shows ferry-boats and tugs plowing their throbbing way through wastes of snow-covered, broken ice. It is the lower Hudson, or North River, as it is called locally, that carries the bulk of the commerce of the busiest port on the face of the globe.

XUM

Photograph by Edwin Levick

A TYPICAL STREET SCENE IN NEW YORK'S LOWER EAST SIDE, BENEATH THE "L" TRACKS

From such a neighborhood as this come many of the new soldiers of America, who are upholding the flag with a spirit worthy of Valley Forge or Yorktown, although in such a block there may be spoken, as mother tongues, as many as twenty-seven foreign languages

Photograph by Paul Thompson

AN ICE-CREAM PARLOR ON WHEELS

With no rent to pay and axle grease in very small quantities required, the ice-cream sandwich man is able to make of his pocket a reservoir for pennies in such quantities that frequently he push-carts his way into the ranks of dairy-lunch owners.

ple who have to be shown at every step of the way, fighting against disease dissemination in crowded factories, crowded cars, crowded streets, New York has triumphed over all its health handicaps.

ALWAYS OUTGROWING ITS UTILITIES

In every phase of its development New York City is like an adolescent boy who is always outgrowing his clothes; the city fathers are kept on tenter hooks to meet its expansion. Its schools are always overcrowded because, rich as it is, the municipality cannot buy sites and build schools fast enough to keep up with the ever-growing child army. Its transportation lines are always choked with passengers because one subway cannot be completed before another is needed. Its bridges and tunnels are always pressed to capacity because the interval between the realization of a new need and the opening of facilities to meet it is long enough in New York's rate of expansion for a succeeding need to be born.

Everywhere one hears the roar of dynamite—the growing pains of a great city. Months there are as years elsewhere and years as decades. The ultra-modern of yesterday is the commonplace of tomorrow and the obsolescent of a decade hence; for New York adds a Maine - New Hampshire - Vermont population to its own every ten years, and facilities must ever march at double-quick to keep pace with such growth.

But at last the city has found one place where engineering construction is able to outstrip human expansion and prepare for decades ahead. It has built a water system that will take care of half a century of growth and form a unit in the bigger system that may lie beyond that period.

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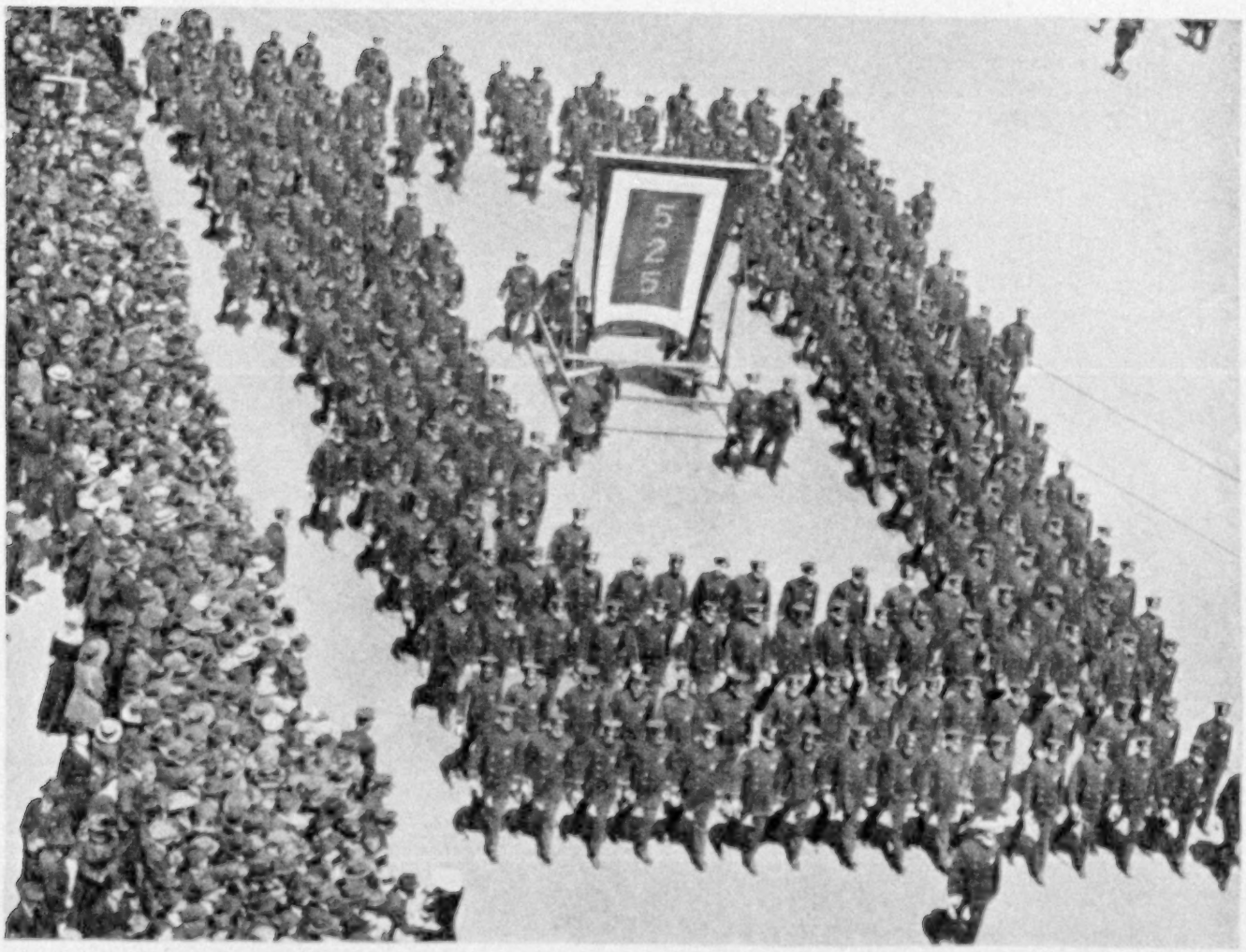

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NEW YORK POLICE DEPARTMENT'S SERVICE FLAG

The police force of the city is ready for any emergency. It is said that fifteen thousand civilians can be called to arms and action in an hour. Every precaution has been taken to insure the maintenance of law and order in the face of any aërial or submarine attack.

THE LONG FIGHT FOR AN AMPLE WATER SUPPLY

For generations Gotham has had a hand-to-mouth water supply, as is the case with other municipal requirements. The gaunt specter of water famine, with all of its attendant train of gnomes—disease, uncleanness, crippled industries, beggared homes—ever lurked in the shadows of the immediate future.

Finally, there arose a man with a vision and with courage. He foresaw all the evils of water famine and never did the great Roman senator repeat his famous dictum "Delenda est Carthago!" more persistently than did Charles N. Chadwick his doctrine that "New York must have an adequate water supply." One by one he won supporters to his idea—now the Manufacturers' Association, now the Merchants' Association, now the Mayor, now the Governor of the State, now the legislature itself.

It was a long fight. City administration prejudices against a non-partisan continuing board had to be overcome, the Governor had to be won over to the idea that patronage must be left entirely out of the question in the expenditure of nearly $200,000,000, and neighboring counties had to be induced to surrender their opposition to the project of an outside city exercising the right of eminent domain within their territory and stripping them of large supplies of water.

ENOUGH WATER TO SLAKE THE THIRST OF THE WORLD

But all these difficulties were overridden, and today there flows down to New York from the Catskills an underground river deep enough and wide enough to carry drinking water for the whole world. In size, in length, in the volume of water it will carry, as well as in the cost of construction and the engineering prob-

Photograph from Paul Thompson

PREPARING THE FOUNDATIONS FOR THE WOOLWORTH BUILDING

So tall is the big skyscraper that its foundations had to be sunk to bed-rock through 115 feet of quicksand. The structure rests on sixty-nine piers of partly reinforced concrete. The "beehive" in the foreground was the "working chamber" where the "sand hogs," or men who excavate sand under air pressure, did their digging.

Photograph from Edwin Levick

THE DAILY THRONG IN NEWSPAPER ROW: THE MANHATTAN END OF BROOKLYN BRIDGE

Brooklyn has a population of nearly two millions, and during the rush hours it seems as if the whole borough wants to cross the Brooklyn Bridge at once. Yet every East River tube and each of the other three highway bridges is doing its best to relieve the crush at City Hall Square.

lems involved, it makes every other aqueduct of ancient and modern times look like a pigmy project. If it were diverted into Fifth avenue, it would be a stream waist deep, flowing at the rate of four miles an hour.

A day's supply would fill a cistern a hundred feet in diameter and nearly two miles deep. Each human being inhabiting the earth could get two and a half pints of water every twenty-four hours from its capacity flow.

Costing for each mile eight or ten times as much as a thoroughly modern double-tracked railroad, to carry a corresponding volume of water thirty great steel pipes four feet in diameter would have been required. Such a pipe-line would have cost twice as much as a tunnel of equal capacity through the eternal bedrock. It has been estimated that, within the city limits alone, fifteen million dollars was saved by the types of construction adopted rather than the use of steel piping, to say nothing of the tremendous cost of renewals which the latter would have entailed.

THE BUILDING OF THE CATSKILL AQUEDUCT

The Catskill system, with all its tremendous capacity, is not expected to bear the whole burden of supplying the metropolis. The Croton Aqueduct, though long since outgrown, is still a sizable waterway itself, for it could supply every inhabitant of the globe with a pint and a half of water a day. As an ally it will be an invaluable aid to the Catskill stream. Between them they will have, when the Schoharie dams are built, an aggregate capacity of eight hundred million gallons a day—half a gallon per capita for the whole world.

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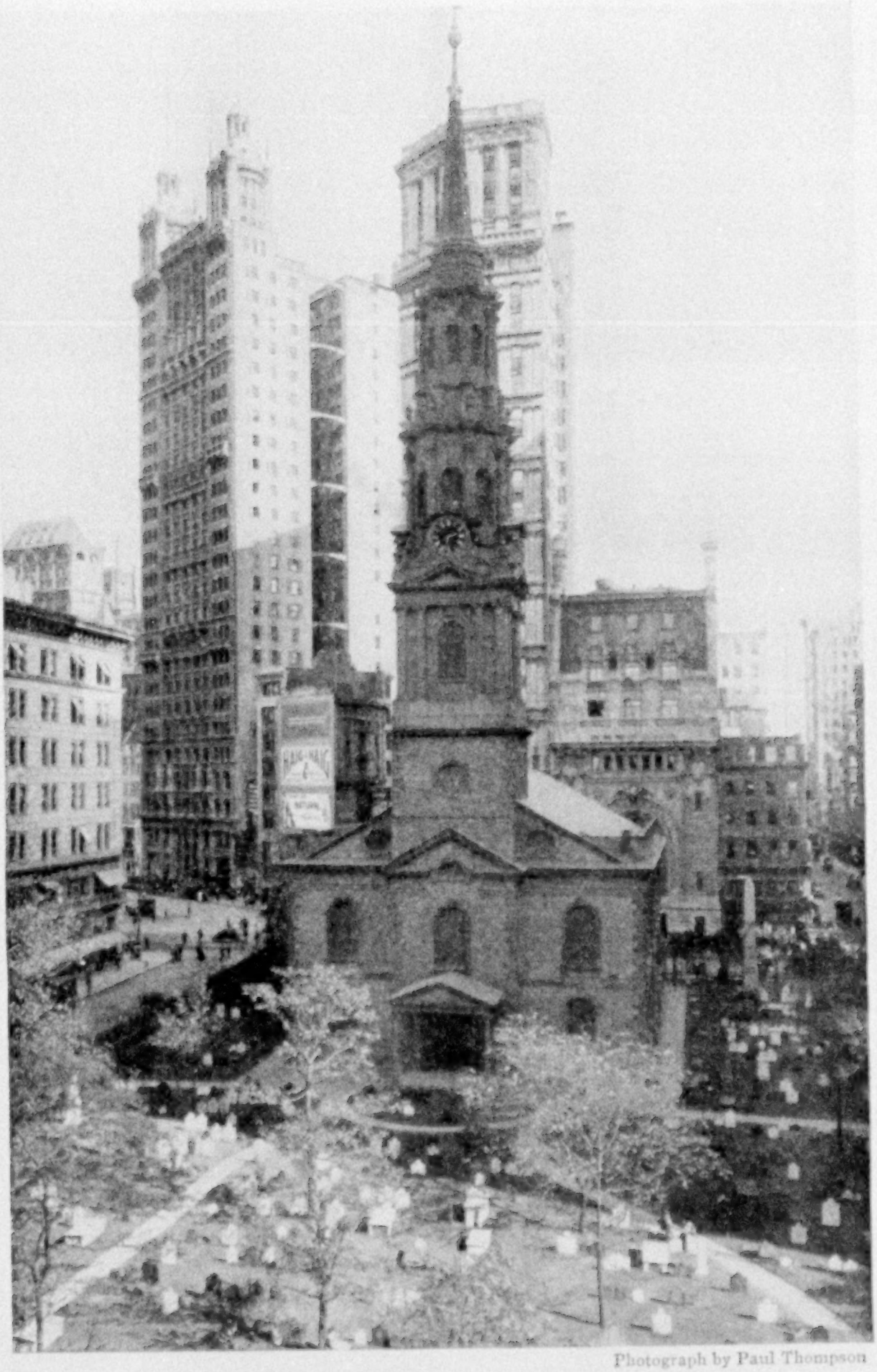

Photograph by Paul Thompson

ST. PAUL'S CHURCH AND GRAVEYARD, WITH PARK ROW AND ST. PAUL BUILDING IN THE BACKGROUND

There is every kind of quarter in New York. Here in its very nerve center is St. Paul's Church, oldest religious edifice in the city, where Washington worshipped. A few blocks away is Judea, with its innumerable six and seven story tenements. One square mile of ground in this Bowery-bisected quarter has a population as great as the 113,000 square miles of Arizona's domain.

To build the Catskill Aqueduct, a vast army of workmen had to be assembled. Construction days reminded one of Panama. The men were well cared for; schools, gardens, recreation centers—everything necessary to make them happy and contented—were provided, with the result that there was not a strike from the inception of the work to the day of its completion. Furthermore, the immense task was completed nearly a year ahead of time and for seven million dollars less than cost estimates.

Let us have a look at the big waterway, starting at Ashokan Reservoir and following it down to the end—Silver Lake, Staten Island, 119 miles away.

The first consideration was the geology of the region. In the Devonian Period of Paleozoic times, estimated at some forty million years ago, all interior New York State was under the sea that submerged most of the continent. Gradually the winds and the rains wore down the outcropping heights, and the waters carried the resulting sands away, depositing them on the floor and shore of the sea. Then there came a rising of the land from the sea, and the winds and the rains again began their long, tedious, but tremendous work of earth sculpture.

Glaciers began to plow their way toward the sea, too, like huge jack-planes, and when they passed through the Esopus region they cut a way for the draining of a beautiful preglacial lake. Thereafter Esopus Creek flowed down to the Hudson.

When New York City looked over all available water supplies, Esopus Valley, about eleven miles northwest of Kingston, was thought to rank first, and was selected. A great dam thrown across this valley would impound the waters of Esopus Creek, restore the lake that had been destroyed millions of years before man looked upon the earth, and give New York a great source of potable water.

THE GIGANTIC ASHOKAN RESERVOIR

And so the building of Ashokan Reservoir began. It was to be a body of water 12 miles long, having an average width of a mile and a shore-line 40 miles long. Its average depth was to be 50 feet, with a maximum of 190 feet. It was to hold enough water to cover Manhattan Island 30 feet deep—enough to furnish the whole population of the United States with its drinking water, omitting deductions for evaporation and seepage, for a period of ten years!

To impound all this water there had to be a dam built higher than the one at Gatun on the Panama Canal, with several dikes across saddles or gaps where the lake would have broken through the sides of the valley. But that was not all. Thirty-two cemeteries, containing 2,800 graves, had to be removed, 11 miles of railroad had to be relocated, 64 miles of roads had to be discontinued, and 10 miles of macadam road built.

The big dam is 240 feet high, as compared with 105 feet for the Gatun Dam at Panama. At its base it is 190 feet thick. It is 1,000 feet long and is made of tremendous boulders imbedded in concrete.

When the waters began to rise, it soon became evident that not only had a wonderfully utilitarian reservoir been constructed, but that it was also a superbly beautiful lake, a gem like Como or Maggiore. Landscape gardening has added to the beauties of the natural situation. A ten-thousand acre lake bordered by a five-thousand acre sanitary zone, Ashokan is as much a delight to the eye as its waters are a joy to thirsty millions of men.

But Esopus Creek will never be able to keep Ashokan Reservoir full, for although a single inch of rainfall means 113 tons of water to every acre, Esopus watershed is far too small for New York's water demands. So provision has been made for the damming of Schoharie Creek and the construction of an 18-mile tunnel under a mountain. This creek will cease to flow north into the Mohawk, and will be made to flow south into New York's watermains. Also, a Schoharie Reservoir will be built, big enough to store one-sixth as much water as Ashokan.

THE WATER'S AIR BATH

One of the sights at Ashokan is the aëration plant. A bed as long as a city block and half as wide is covered with water pipes four and five feet apart. At

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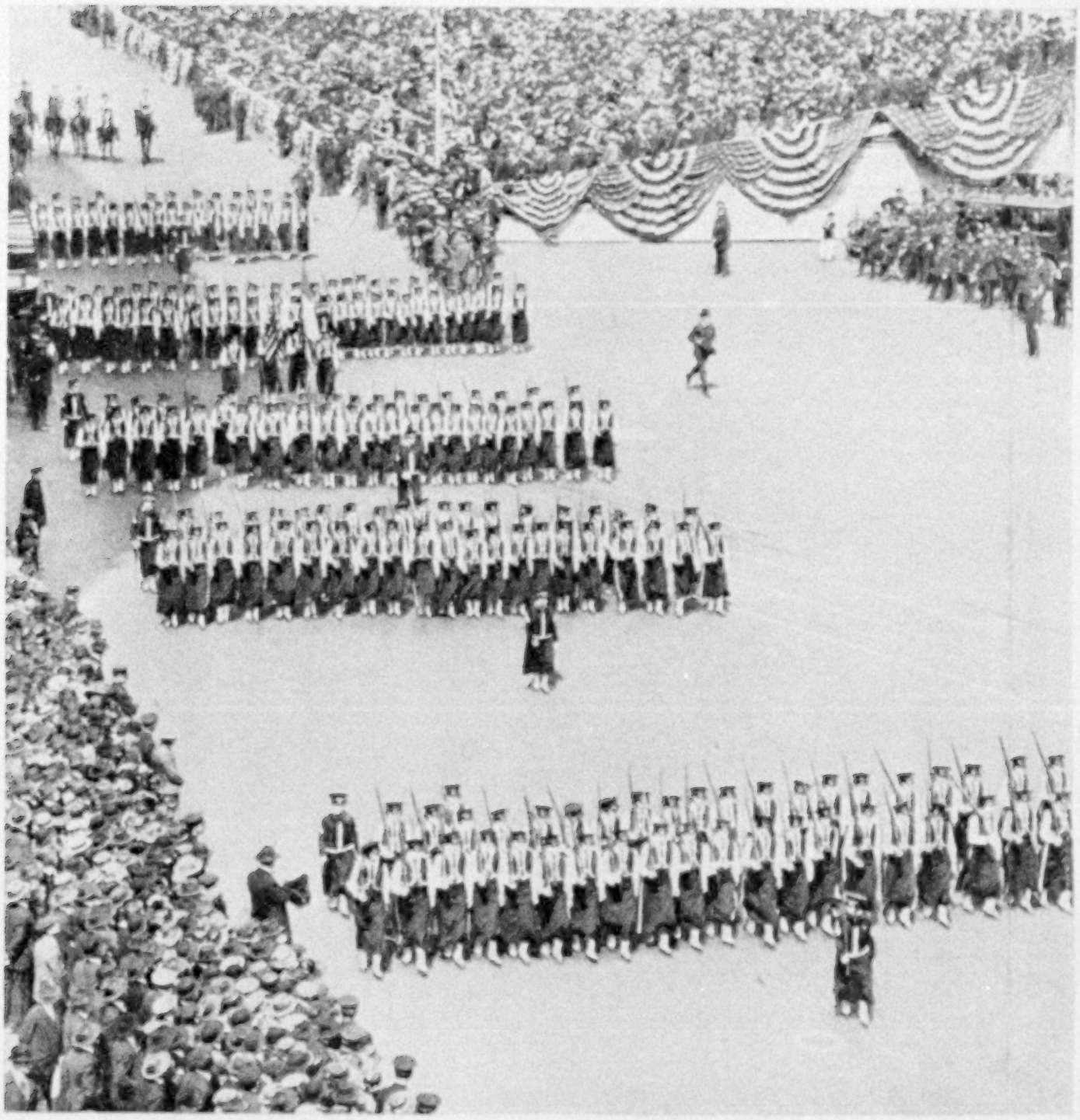
Photograph from the New York Edison Company

COLUMBUS CIRCLE ON A RAINY NIGHT: NEW YORK CITY

Northward the star of New York's business empire still moves. The financial district is anchored downtown, but "automobile row" has selected as its place in the sun that section of Broadway above and below Columbus Circle, and automobile row has a way of blazing the trail of business into the heart of the residential district of many American cities. Also the gay night throng that once found Times Square the northern boundary of its peregrinations now wanders up Broadway to "The Circle" and Central Park.

intervals of five and six feet in these pipes are nozzles which send up columns of water from forty to sixty feet in the air. Breaking into fine spray, the water descends almost as clean and pure as if it had been raised by evaporation and precipitated again. A fountain three acres in area, surrounded by deciduous and evergreen trees, is a charming sight and forms a rare introduction to this Gotham-made Como.

After receiving its air bath, Ashokan water is ready to begin its long journey to New York. The aqueduct first leads it to Kensico Reservoir, 75 miles away, and on the opposite side of the Hudson.



© Paul Thompson

WOMEN POLICE PARADING DOWN FIFTH AVENUE: NEW YORK CITY

New York's police department faces a tremendous task. The city, because of its great size, the indifference of its citizens to the comings and goings of their neighbors, and the opportunities afforded for having a good time suited to every taste, attracts alike the criminal and those on pleasure bent from everywhere. The war has made a heavy draft on New York's conservators of law and order, but women are proving that they can patrol a beat or collect fares in a street car as well as men. Thus does the economic emancipation of woman receive another boost.

Between these two reservoirs four kinds of construction were used. Over approximately level ground, the cut-and-cover method was used—a great trench was dug and in it was built a horseshoe-shaped conduit of concrete. Where hills interposed, instead of going around them, grade tunnels were built through them.

When valleys, creeks, and rivers came in the way, there were three courses open: great masonry aqueducts like those of ancient Rome could be built; steel pipe-lines could be laid on the floor of the valleys; inverted siphons or pressure tunnels could be dug far below the surface through solid rock.

Photograph from Norman Thomas and W. W. Rock

MADISON SQUARE: THE FLATIRON BUILDING AND FIFTH AVENUE BUILDING

Where once stood the Fifth Avenue Hotel, with its "Amen Corner," now towers a great office structure, the Fifth Avenue Building, and the Hoffman House, where the Democrats of the country used to foregather, is only a memory. Where society once reigned supreme, now there are cloak and suit lofts, and Madison Square is little more than a way station twixt the uptown and downtown business districts.

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A lofty masonry aqueduct was open to danger of destruction; pipe-lines were both expensive and liable to leaks; the tunnel was decided upon. In some places these tunnels go very deep, so deep that the water exerts as much as three and a half tons pressure per square foot.

When the aqueduct builders came to the Rondout Creek Valley they met with a discouraging situation. They found a very poor quality of rock under the valley, with many faults. Their drills slipped through into caverns of unknown depths, and at one place they encountered a spring deep in a rock fissure, which had a flow of 2,000 gallons a minute. There was sulphur present, also, and its fumes seriously inconvenienced the workmen. However, enough grout was put into the spring to drive it out of their way; with channel rings and concrete the rock was made strong where Nature had made it weak; and they steered clear of the caves. This tunnel was only 727 feet below grade, and little attention was paid to it by the public.

CARRYING WATER BENEATH THE HUDSON

When the Hudson crossing was reached, where the tunnel goes down so deep that the Woolworth Building placed on top of the United States Capitol and surmounted by the Washington Monument would leave only the capstone of the latter showing above the water surface, New York was gloomy and fearful. Failure of the undertaking was freely predicted. Nevertheless, the construction of the spectacular Hudson tunnel was a far easier task than the unnoticed one at Rondout. The Hudson is tunneled 45 miles below Ashokan Reservoir.

In the building of this under-the-river tunnel, it was first necessary to ascertain exactly the lay of the solid rock below the river. First, an effort was made to drill down to the surface of bed-rock with drills mounted on scows. But that was a failure. Drills were lost and all sorts of hindrances encountered. Then it was determined to dig a shaft at each side, about 300 feet deep, and from these to drill two V's under the Hudson, one with a broad and the other with a sharp angle. In this way the engineers gained the necessary data about the rock formation.

Diamond drills were used. These drills are circular tubes, the lower ends of which are studded with seven black diamonds, costing about $100 each. The drill cuts through the rock like an apple corer through an apple and brings the core to the surface with each stratum in the position in which it was found.

Thus the position of the rock was revealed and its density determined. The engineers ascertained that they could put their tunnel under the river nearly 1,400 feet beneath the surface of the water.

AQUEDUCT BUILDING, ANCIENT AND MODERN

Engineering has progressed in great strides since the days when the Romans were building aqueducts. When the Aqua Claudia was under construction a tunnel under a mountain three miles long was necessary, and the chief engineer started work at both ends. He was captured by brigands, and when he was finally liberated he found that his two digging parties had missed one another entirely and were excavating two tunnels instead of one. When the Hudson tunnel was bored the two parties met and were not half an inch out of the way, although the undertaking required the sinking of two pits 1,114 feet deep, from the bottoms of which the tunnel operations were started.

The Hudson crossing is about half way between West Point and Newburgh, at Storm King Mountain. Thirty miles nearer the city, on the east side of the river, is Kensico Reservoir, with a capacity of thirty-eight billion gallons—22 gallons for every inhabitant of the earth.

This reservoir is four miles long and from one to three miles wide. The water is impounded by a dam thrown across the Bronx River, one of the finest structures of its kind in existence. A third of a mile long, and 307 feet high, it is 235 feet thick at its base and 28 feet thick at its crest. The exposed portion of the down-stream side is made of huge granite blocks.

Above Kensico there is what is known as a coagulation plant. Here provision is made for treating muddy water with a harmless coagulant. In flood periods silt is brought down from the watersheds.

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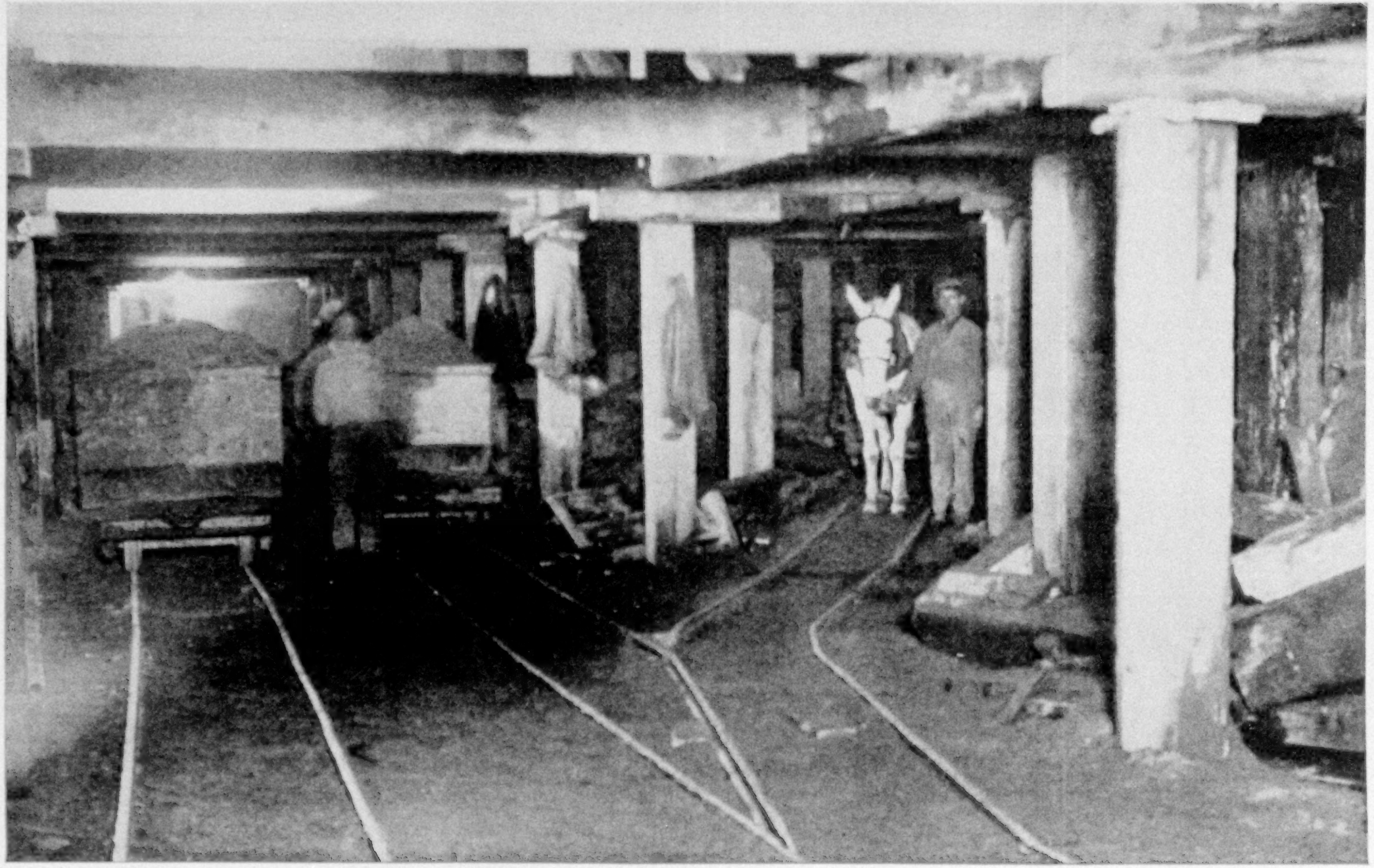

Photograph by Paul Thompson

A PROSPECTIVE GOLD MINE BENEATH BROADWAY

The problem of building new subway lines in New York is a tremendous one. For instance, Broadway, at Canal street, is only ten feet above sealevel, and the excavation had to be carried down forty-seven feet. Great quantities of water were encountered and at one time twenty million gallons a day, enough to supply a city of 150,000 inhabitants, had to be pumped out with great care, so that no sand was carried along. Because of the head of water, large masses of concrete had to be introduced to keep the subway from floating. Where it crosses the Hudson tubes the two systems had to be linked together with a concrete saddle.

The chemical causes the clay to coagulate and settle to the bottom of the reservoir while waiting its turn to pass into the city-bound watermains.

WHERE THE WATER IS "GASSED"

At the outlet of the Kensico Reservoir there is a chlorination plant. Here the Water Department practices the German art of "gassing" on the germ tribe. A very small quantity of this gas will kill many millions of germs. Nowhere else in the world, except on the battlefront, is "gassing" practiced as much as in the battle against the disease germ armies that seek to invade New York via its water supply.

After leaving Kensico Reservoir, the Catskill Aqueduct flows another 17 miles to Hill View Reservoir, used for equalizing day and night consumption of water. This brings the water to the metropolis, where the great 18-mile tunnel through solid rock under the city begins. This tunnel is the longest of its size in the world.

Starting at Hill View Reservoir it is 15 feet in diameter through Harlem and under Harlem River to 135th street. It is within three inches of being as large in diameter as the Hudson Terminal tunnels under North River. It crosses the Harlem between High Bridge and the Polo Grounds and extends through Central Park and Madison Square to a point between Williamsburg and Manhattan bridges, where it dives under East River. On the Manhattan bank of the river there is a shaft in which the Woolworth Building could be buried, so far as depth is concerned.

HEEDLESS OF HUMAN MOLES BLASTING THEIR WAY BENEATH THE CITY

After passing under the river the tunnel rises to the surface in Flatbush, where it connects with the 5-foot-6-inch Brooklyn main. Hence its water runs on to the Narrows, where a three-foot ball-and-socket pipe-line, with joints calked with 300 pounds of lead, was laid in a trench cut in the floor of the inlet. This line carries the water to Staten Island and into Silver Lake Reservoir, 119 miles from the intake at Ashokan.

Here we find how much an unconsidered thing in every-day experience may count in a big project. Take a U-tube and put water into it. The water rises to the same level in both sides. But, although Ashokan and Silver Lake are the two terminals of the figurative Catskill U-tube, their waters by no means reach the same level. The surface of Silver Lake is 362 feet lower than that of Ashokan Reservoir, because of the friction in the big waterway. When it is remembered that a column of water 362 feet high exerts a pressure of more than a thousand tons per square foot, one can appreciate the amount of friction the water encounters in its journey to the city.

Although, on an average, five tons of dynamite were exploded daily during the long period in which the city tunnel was being built, New York might never have known that rock-defying human moles were boring their way through the big town, from the Yonkers line to Flatbush, except for the shafts sunk from the surface at convenient spots.

URBAN TRANSPORTATION

As a completed project, the Catskill Aqueduct stands as one of the wonders of the engineering world. With a length of 119 miles, with a capacity that exceeds the combined flow of all the aqueducts that imperial Rome ever built, with 35 miles of tunnel sunk deep in the primeval rock, the great subterranean stream that brings the life-giving, health-protecting, industry-quickening waters of the mountains to the people at the gateway to the seas represents the indomitable spirit of a municipality that is as virile as it is big, ready to shoulder any burden its unceasing growth imposes upon it.

In no other phase of its complex life has New York felt so acutely the problems that its size and peculiar geographic situation involve as in the matter of urban transportation. With its own population supplemented by the army of commuters living in Jersey, on Long Island, and up the Hudson, twice as many people are transported in a single day within the confines of Greater Gotham as are moved by all the steam railroads of the United States.

Go to Grand Central Station during the rush hours of the morning and after-

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Photograph by Paul Thompson

"THE HOUSE OF A THOUSAND WINDOWS": THE EQUITABLE BUILDING, THE LARGEST OFFICE STRUCTURE EVER BUILT

On the average square mile of Manhattan territory there dwells a population nearly equal to that Albany, Des Moines, Fort Worth, or Lynn. To provide elbow room for the business element in a city of such density the skyscraper is a necessity. One of these big buildings demands from fifteen to twenty ten-car subway trains to care for the coming and going of its population. If the big city's office buildings were limited to eight stories they would occupy the major portion of Manhattan.

noon, and you are easily convinced that beyond the Bronx live a million people whose bread-winners work below Harlem River. Go to the Pennsylvania Station at the same time, and you see the wage-earners of tens of thousands of Long Island and Jersey homes coming or going. And at the Hudson Terminal one is ready to conclude that half of Jersey's homes have wage-earners and salaried folk who work in Manhattan and live in Rahway, Orange, Montclair, or somewhere down Jersey way.

A new skyscraper lifts its head toward the blue and straightway 15,000 people find working quarters. Let us load these workers on subway trains and see what it means. A ten-car subway train can carry a thousand people to or from work. It takes fifteen such trains to handle the new skyscraper's tenants. And it takes twenty-six minutes to put fifteen such trains through the necks of the traffic bottle—as at 42d street.

In no other city in the world do as many people live out of walking distance to their work as in New York. Manhattan Island is 13 miles long and only a mile or so wide, and downtown Manhattan is the habitat of the skyscraper and not of the home, except on the East Side. The result is an unbelievable amount of travel. Subway, elevated, and surface cars carry two billion people a year. Every day 30 tons of nickels flow into the coffers of the rapid transit and surface lines. Every year 200 car loads of "jitneys" are harvested from the ride-buying public.

THE NEW YORKER A GREAT RIDER

If New York had only to meet its annual increase in population, that in itself would be a sizable task; for taking care every year of the comings and goings of a new population equal to that of Wyoming were no mean undertaking. But that is only the beginning of the big city's transportation troubles. The people ride more frequently with every extension of facilities.

When New York had only its surface lines to depend on, Mr. Average New Yorker took 147 rides a year. Then came the elevated and he began taking 215 rides a year. When the first subway went into commission, he jumped the annual number of his rides to 298. Now he is using the cars more than ever—is this Mr. Average New Yorker—with some 348 rides a year to his credit. How many rides he will take when all the new subways and elevated lines are completed can only be surmised, but the extensions under way will enable the overhead and underground systems to handle three billion passengers annually without aid from the surface lines.

Crowding her debt limit to the utmost to meet other conditions imposed by her extraordinary growth, New York was financially "up against it" when traffic demands called loudly for new facilities. She was not willing to have new subways built and owned by private enterprise to compete with those already in operation and owned by her, though leased to an operating company; and yet she was not able to finance the extensions without outside help. Meantime, subways that were built to handle 400,000 people a day were approaching the time when they would be called upon to move 1,200,000 every twenty-four hours.

FURTHER EXTENSION OF SUBWAY AND ELEVATED LINES

So the city made a deal with the two rapid-transit companies to "go fifty-fifty" with them in building all subway extensions and to allow the companies to extend the elevated lines.

The result is that instead of one line up Manhattan, on the East Side to 42d street and on the West Side above that street, there will be, when the present project is completed, a line all the way up the East Side and another up the West Side, with branches into the boroughs of Queens, Bronx, and Brooklyn.

And yet, with all the effort that has been made to anticipate the city's traffic needs, every New Yorker feels that there are other needs ahead. Already there is agitation for a through line from downtown to uptown that will make even "rapid transit" a slow phrase. It is believed that the time is not more than a decade distant when it will be imperative to establish an entirely new sort of service—a "high-speed service." This may be given by a line built under one of the

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A FUTURE AMERICAN CARRYING HIS OWN BAGGAGE AT ELLIS ISLAND

Out of such plucky raw material as this has New York made itself the metropolis of the New World

Photographs by Paul Thompson

HERMES TYPIFYING LABOR: A PART OF THE STATUARY OVER ONE ENTRANCE TO GRAND CENTRAL STATION

Note the comparative size of the artisan standing on the thigh of the figure as he works

avenues east of Fifth from Bronx to Battery, upon which trains will run which will make only three or four stops between the Harlem River and the financial district.

THE BRIDGES OF MANHATTAN

The "river ring" around Manhattan Island has long forced expansion along abnormal lines, resulting in a shoe-string borough instead of a compact one. The center of the business district is at one end of the borough and not in its heart. But, at last, the city is going to grow like other cities, rivers or no rivers. The Harlem presented no serious obstruction to the plan. Narrow and in a deep valley, it was readily bridged. But East River and North River were different propositions.

It costs millions upon millions to build a big bridge like the Brooklyn, the Williamsburg, the Queensboro, or the Manhattan, but one by one, in the order named, these great structures, towering high enough above the river to avoid interference with navigation, have been thrown across, in order to permit the metropolis to occupy its natural territory on the west end of Long Island.

These bridges have cost the city nearly one hundred million dollars. They have an aggregate length of nearly six miles and are crossed by eight hundred thousand people every day. They could carry that many persons every hour if they were used by the maximum number of elevated, subway, and surface cars which they can accommodate and if each car were loaded to capacity.

SIXTEEN TUBES UNDER THE RIVER TO RELIEVE THE BRIDGES

Although Manhattan Bridge is the world's greatest suspension bridge, and although its neighbor bridges in conjunction with it constitute the greatest aggregation of water-spanning structures in existence, they are wholly unequal to the task of caring for the tide of humanity that ebbs and flows during rush hours between Manhattan and Long Island.

Eight tunnel tubes have been built to share the burden; but in spite of these reinforcements the bridges still carry an increasing number of passengers every year. Eight other tubes are now eating their way through the silt of the river's bottom, and when they are in commission there probably will arise a necessity for as many more.

Bridged over and tunneled under, East River has heard the verdict of the indomitable metropolis, that it can no longer force the city to grow in shoe-string shape.

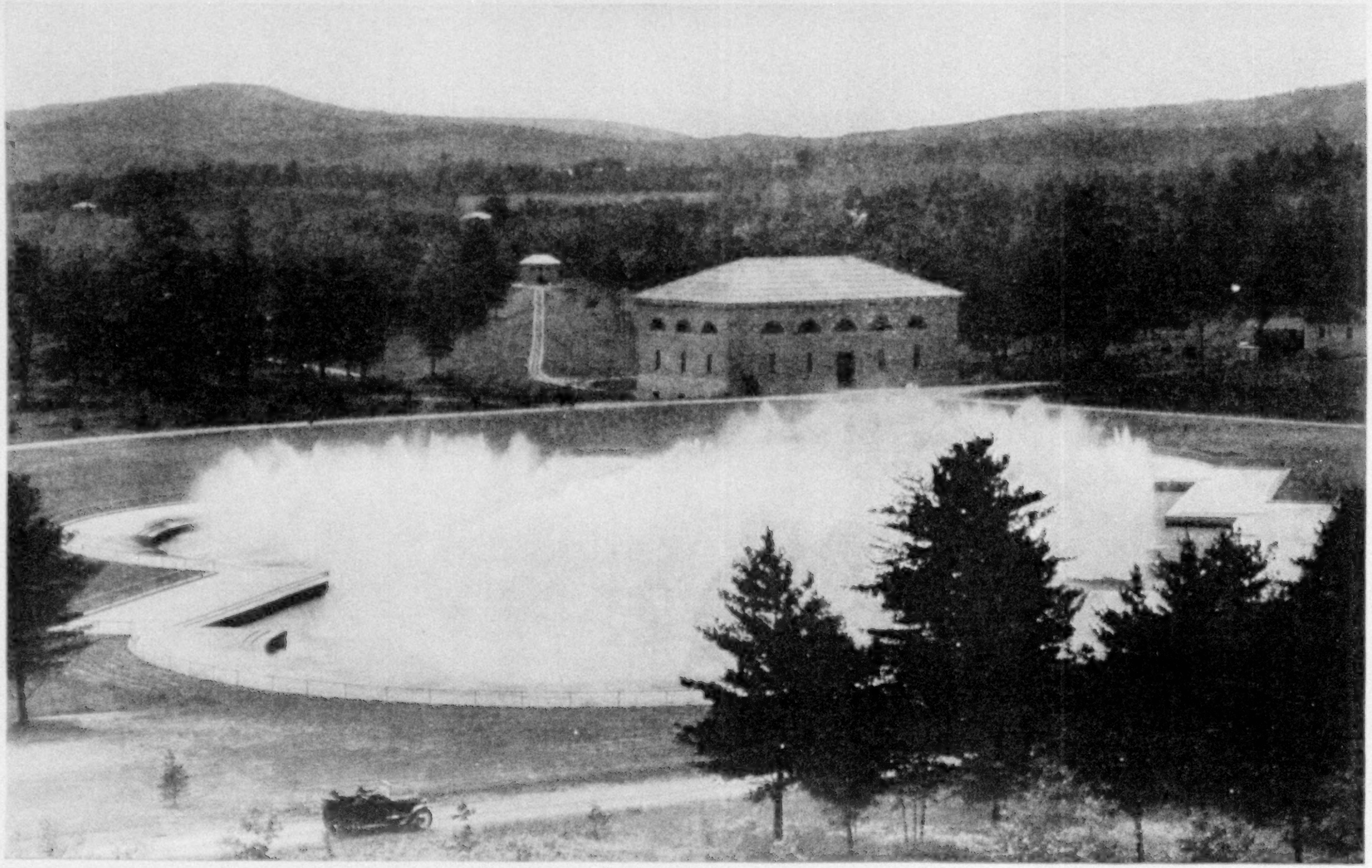
Not less serious than the blockade imposed by East River against the eastward expansion of the city is the lack of north and south streets in Manhattan. With the spread of the motor-car, the city finds the comparatively few-and-far-between avenues that run north and south inadequate. The men who laid out the city made the east and west thoroughfares close together and those north and south far apart, producing oblong blocks instead of squares. Yet so long have the north and south thoroughfares become that a vast amount of travel must be concentrated in a few avenues.

THE AVENUE PROBLEM

Many suggestions have been made for overcoming this congestion. One was to raze a way through Manhattan, driving a new avenue into the great breach. Another was to double-deck one of the avenues, using the second level for light vehicular traffic. Still another proposal is a subway for heavy trucks. It is the hope of the city that the bridge and tunnel conquest of East River will make the day a little more remote when the solution of the problem of providing new facilities for north and south vehicular traffic will become imperative.

The problem of getting across North River is almost as acute as has been that of overcoming the obstacles interposed by East River. Prior to the recent order of the Railway Administration, only one of the many trunk lines that approach New York from the West and South entered the city. All the others discharged their passengers in Jersey-side stations, where water and rail meet.

Up to the time that the present Secretary of the Treasury and Railway Administrator, William G. McAdoo, showed how to cut the Gordian knot of an unbridgeable river by going under it instead of over it, the ferry boat was the



Photograph from Edwin Levick

THE AËRATION PLANT AT ASHOKAN RESERVOIR

This plant was built to give New York's water an air bath before its entrance into the big aqueduct. It consists of a concrete pool as long as a city block and half as wide, covered with water pipes laid in squares four by five feet. At intervals of five and six feet are nozzles through which the water is driven from forty to sixty feet into the air in the form of fine spray. It descends perfectly oxygenated. A fountain three acres in area surrounded by deciduous and evergreen trees is a delightful sight and forms a rare introduction to this Gotham-made Como (see text, page 31).

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only line of communication between the west bank of North River and the east bank. Now, however, there are six tubes under the Hudson, two belonging to the Pennsylvania Railroad and four to the Hudson and Manhattan Subway System.

Owing to the growth of the motor-car industry, thousands of trucks and passenger cars are demanding direct communication between Manhattan and New Jersey. To meet this need it is proposed that a vehicular traffic tunnel be constructed under the river, and unless New York breaks all analogies of her history, such a tunnel will be in operation within two decades.

THE WORLD'S LARGEST CANTILEVER BRIDGE

When the Pennsylvania Railroad was halted at Jersey City by North River, its one great ambition was to get into New York. Finally the McAdoo tunnels showed the railroad how, and it not only entered the city, but through it and under East River to Long Island.

Then it conceived a new ambition—to get out of New York and into New England railroad territory. It attained that end by utilizing its Hudson tunnels into New York, its East River tunnels into Long Island, and a new bridge out of Long Island and into the New York-New England mainland. A great cantilever bridge, the largest in the world, swings its graceful way across East River from Long Island to the Bronx mainland, where the long coveted connection with New England railroads is achieved.

Passengers from the South and West to New England thus dive under the Hudson, under the city, under East River, and come up on Long Island. Then they face about and speed over the river under which they passed only a few minutes before.

This Hell Gate structure is one of the most beautiful bridges in the world. Sweeping in a broad, graceful quarter-circle from the Long Island shore, across Ward's and Randall's islands to the mainland, it has a splendid arch that matches its curve and combines with the latter to make the structure one of unusual symmetry. The bridge and its approaches cost $27,000,000. Its arch, the longest in existence, carries a concrete deck on which is laid a four-track railroad.

HOW NEW YORK HANDLES ITS FREIGHT

A congestion of population that at places reaches 3,000 to the acre and at others concentrates as many people as live in the whole State of Nevada within the limits of a single square mile, means not only overtaxed passenger transportation facilities, but overburdened freight movement as well.

Ride from Danbury, Connecticut, to Plymouth, Massachusetts, from New Bedford, Massachusetts, to Bangor, Maine, thence to Burlington, Vermont, and down to Boston. You will naturally conclude that New England is preëminently a manufacturing region. Yet the value of New York's manufactured products is nearly as great as that of the output of all New England's factories.

Well might the freight-handling facilities of any city stagger under such a load, especially a city whose main borough is only a narrow tongue of land with a broad river on each side, a sea at one end, and a small river at the other.

WHAT NEW YORK EATS

It takes a tremendous amount of foodstuffs to supply nearly six million people. Every week the city eats 200 trainloads of food. It must have 2,160 carloads of cereals and flour, 2,000 carloads of milk, 1,636 carloads of vegetables, and 1,168 carloads of meat, dressed and on the hoof. Picture a food train 76 miles long, drawn by 200 engines. That is New York's weekly food supply.

The handling of manufactured goods and foodstuffs is only the beginning of the city's freight-moving problem. Her harbor is the gateway between New England and a major portion of the remainder of the country. Into the "down East" manufacturing district pour raw materials and coal through New York, and out of that district come the finished products. Billions of dollars worth of stuff must be lightered back and forth through Gotham waters.

But these are merely the problems which the movement of domestic freight present to New York. As pointed out in the in-

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PENNSYLVANIA STATION: NEW YORK CITY

With its Doric façades designed to suggest Roman temples and baths, and with its grand stairway and its general waiting-room constructed of travertine from Tivoli, Italy, and modeled after the Baths of Caracalla, this station is indeed at once a monument to transportation and to Roman architectural genius. The highest track that runs into the station is nine feet below sealevel. Millions of people pass its portals every month.

troduction, the value of the exports from this port is greater than the value of the exports of Asia, Africa, and Australia combined. Think of the thousands of cargoes which leave these continents. And then add the vast international trade between the countries of Asia, as Japan with Russia and China. Yet all this intercontinental and international trade combined does not amount to as much as the outgoing trade of the port of New York.

The incoming trade, also, is vast in volume—South America, Africa, and Australia combined are far behind New York in the comparison of import values.

With such an unmatched combination of freight-moving demands, what wonder is it that even the supercity falters? Many remedies have been proposed. Ward's Island, planted in the throat of East River, together with Hell Gate, stands as an obstruction to through East River traffic. It has been proposed that great ship terminals be built on the shores of the Bronx above Hell Gate, thus providing entirely new docking territory. Already work in this direction has been started and some extraordinary difficulties have been encountered on the marshy shores, where the mud is so fluid that it has to be moved by hydraulic dredges and deposited behind retaining walls.

Congress has just enacted a law providing for the deepening of Hell Gate channel to 40 feet. This will give the Bronx a splendid water-front of its own.

NEW YORK'S GREAT WATERFRONT

New York has 578 miles of waterfront, of which 450 miles are available for pier construction. The harbor is far superior to that of London or of Liverpool. The Thames is a brook beside the Hudson, and requires constant dredging. Liverpool has a tide of 30 feet range, with enormous watergate construction required to overcome it, while New York Harbor is practically tide free.

In so far as docking space is concerned, New York can expand her harbor to a capacity equaling the combined dockage space of any five of the main ports of Europe.

On the Manhattan shore of North River, between 36th and 39th streets, the city has begun the construction of a series of gigantic piers for modern leviathans. These piers are 1,050 feet long, with slips 350 feet wide and having a depth of 44 feet at mean low water.

Construction preliminaries for these piers reminded the onlooker of the raising of the *Maine* in Havana Harbor. A huge cofferdam, the largest ever made, was constructed by driving steel sheet piling around the space to be excavated. Then the water was pumped out of the area enclosed by the cofferdam and work was begun on the building of the piers.

The relief of the congestion beyond the piers is one of the main problems of the port. A series of elevated freight stations, situated behind these piers and accessible to all railroads, just as are the Bush terminals in Brooklyn, has been proposed.

THE POLICE AND FIRE DEPARTMENTS

One hesitates, in an article of magazine length, even to refer to the police and fire departments of the metropolis, for each is a story in itself and defies successful summary in a few paragraphs.

One who stands at a busy corner like Fifth avenue and Thirty-fourth street, when Upper Manhattan and the Bronx are making their morning migration to the downtown district, and watches a traffic policeman handle the inevitable congestion, appreciates two facts—first, that the New York police force faces tremendous problems, and, second, that it solves these problems in a way that is admirable.

The city spends as much for the maintenance of law and order alone as the republic of Colombia spends for all national purposes. If all the people—men, women, and children—in Nevada's largest city were suddenly to turn policemen, they would make a force just about equal to that of New York.

We read often of the failures of the New York police force, but those who realize the vastness of the population, the unusual proportion of criminals which a supercity attracts from the outside world, and the opportunities men have for losing themselves in a community so big and so busy that no one bothers about the affairs of his neighbors, understand quite

Photograph from the New York Edison Company

THE NIGHT GEOGRAPHY OF NEW YORK'S DOWNTOWN DISTRICT

This owl's-eye view of Manhattan south of Madison Square antedates the air-defense order of the month of June and was not taken on any of last winter's lightless nights. Far away in the remote background is the light-flooded Woolworth Tower, with the dome of the Singer Building as a satellite. In the left background twinkle the lights of Brooklyn Bridge. The broad, curving thoroughfare to the left is Fourth avenue, where it becomes the Bowery. In the distant background in the upper right-hand corner one may see the feeble rays of the lights on the Communipaw water front. In the middle distance is Union Square, with Broadway leaving it parallel to Fourth avenue.

well that a police force must be highly efficient to render such an accounting of its stewardship as the New York force is able to give.

The fire department, dealing with a congestion of population such as is to be found nowhere else in the world, protecting the loftiest buildings in the world, guarding some of the most inflammable industries in existence, has a wonderful work to do. Some of the big buildings house as many people during their working hours as reside in North Dakota's largest city; and some of these buildings go down as many stories into the ground as "skyscrapers" rise into the air in many cities.

With the world's busiest waterfront to protect, with industry's most inflammable products to guard from harm, with high buildings and congested tenements to defend against fire disaster, it is little wonder that New York has endeavored to make her fire department the last word in efficiency, with the most modern apparatus, the most thorough discipline, the most unceasing and intensive training for its personnel.

ITS SHOPS AND HOTELS

New York is indeed a many-sided city. It has more facets than a diamond, each fascinatingly interesting, each superlative in its own way. Its amusements, upon which it spends $60,000,000 a year, are a story by themselves. A single theater has had box-office receipts in one season amounting to $1,500,000. The opera has brought in some $10,000,000 in one season, and concerts have added as much more.

Then there are the hotels! Nearly 300,000 people go in and out of the city every day, and a third of them find abiding places in the hotel district. Every night the hotel and restaurant food and drink bill is a million and a quarter dollars. A single hostelry handles more telephone calls a year than the entire kingdom of Bulgaria. The city drinks fourteen million glasses of beer and twelve million glasses of soda water every twenty-four hours and pays $1,300,000 for them. It spends $100,000 a day for ice-cream.

No picture of New York would be even passably complete that did not turn aside from the big problems of a supercity and the story of their solution long enough to tell something about its shopping districts. Perhaps no other metropolis in the world has so many people who are "the glass of fashion and the mould of form," and Gotham has a store for every pocketbook and every taste, from the open-air shops of the East Side, where the hobo can outfit himself in second-hand rags for a song, to the exclusive specialty stores on Fifth avenue, where only those with big bank accounts and expensive tastes are catered to.

Once New York went downtown to shop, but now shops have come uptown to meet New York. One by one, nearly all of the big stores below Thirtieth have gone uptown or out of business, so that of the establishments of merchant princes which formerly graced the region of Fourteenth and Twenty-third streets, only Wanamaker's remains, and even such a name with which to conjure barely suffices to hold the crowd that long has filled that big emporium.

More and more New York is drifting away from the department store and to the specialty shop. Fifth avenue from Thirtieth street to Fifty-ninth is the specialty shopping district. An ideal district it is, too, for here lumbering trucks and evil-smelling meat wagons may not come, and élite New York and the out-of-town shopper can shop and have afternoon tea undisturbed by such traffic.

Rents are high, and so are prices along Fifth avenue, but for all that every store seems to do a prosperous business. One store has nought to offer but lingerie and laces; another specializes in perfumes, and no odor that commerce affords is wanting; still another sells only mourning goods, and yet another toys. Here is a corset shop where only French is spoken, for only the élite are welcome; there a Parisian jewelry store, and a little further on one that handles only leather goods.

Nor must one forget the little specialty places that tuck themselves away on all the blocks touching Fifth avenue on the cross streets, where one may shop at leisure, or the dainty places the initiated find in all sorts of unexpected quarters, even in big office buildings. Some enterprising girl, who has saved a few thousand dollars, unable to pay the big prices

Photograph by Edwin Levick

NEW YORK'S FINAL TRIBUTE TO ITS DISTINGUISHED DEAD

The funeral of Major John Purroy Mitchel, former mayor of the metropolis, who lost his life in an airplane accident at Gerstner Field, Lake Charles, Louisiana. The cortege is passing the Public Library, Forty-second street and Fifth avenue.

Photograph by Paul Thompson

NEWLY ARRIVED IMMIGRANTS AWAITING OFFICIAL APPROVAL: ELLIS ISLAND

If every American whose father and mother were born in the United States were to leave New York City, it would still be the second largest city of the earth, almost as large as Paris and Berlin together.

for "a place with a front," rents a room in an office building, fills it with all sorts of dainty and tasteful merchandise, and makes her little bid for business. The wise shoppers, who must count the cost, seek her tiny emporium and soon she has a comfortable trade.

THE SHOCK OF NEW YORK'S COMMERCIAL LIFE

The greatest shock Fifth avenue ever had was when Woolworth decided to put a ten-cent store in Fifth avenue near Forty-second, right in the heart of the aristocrats of shopdom. "Oh, no, it will never do," said those who take pride in the avenue's exclusive status. "Because the people who visit Fifth avenue to buy would never think of going into a ten-cent store." Mr. Woolworth was a better analyst of human nature, however, and spent many thousands of dollars in mahogany and walnut, outfitting his store as if he were going to carry the most expensive stock in the city. The result has been all he predicted. Women who do their shopping in imported cars and have chauffeurs and footmen seem to love bargains as well as their sisters, whose only conveyance is a street car and who must wash their own breakfast dishes before joining the buying throng. This store has enjoyed success from its opening hour.

From whatever angle it is viewed, whatever facet throws back the light of its activities to the beholder, New York challenges one's interest and stirs one's imagination. Of all cities, it is the international city. In size, in wealth, in financial operations, in manufacturing, in international trade, in racial makeup, in a hundred ways it is the twentieth century Rome to which all roads lead—a city that does not belong to the New Yorker any more than Washington belongs to the Washingtonian. All nations have contributed to its population, and all America contributes to its financial, industrial, and commercial greatness.

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OVERLOOKING THE CITY OF URFA, AT THE HEAD OF THE PLAINS OF MESOPOTAMIA

The experiences of this city of 45,000 people, the Edessa of the Greeks and the seat of a dynasty of its own before the Christian era, are typical of Turkish misrule. It was in the Armenian Gregorian Cathedral, the largest building in the city, that the Moslems and Kurds, in 1896, massacred more than 1,000 Armenians. The victims were suffocated with smoke from burning carpets and mats soaked in petroleum. The so-called Mosque of Abraham in Urfa marks the traditional birthplace of the Hebrew patriarch.

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UNDER THE HEEL OF THE TURK

A Land with a Glorious Past, a Present of Abused Opportunities, and a Future of Golden Possibilities

By William H. Hall

FROM whatever angle one views the Empire of Turkey, he beholds a land of unusual fascination. To the historian, the archeologist, or the geographer it is a storehouse of wealth, worth a lifetime of exploration and study. To the romancer it gives again its thousand and one tales of the Arabian Nights.

Mythology and legend not only come from its past, but are found today on the lips and in the lives of its common people. Poetry and proverb are in the daily speech, while monasteries and mosques proclaim from every mountain top and market-place that religion is a part of the very life of the land.

If one could only turn aside from the horrors of the present, with its black current of misrule, its injustice, its deportations, massacres, and famines, and out of a wonderful past could construct a vision of a more glorious future! For, in spite of four centuries and more of retrogression under the rule of the Turk, there is promise of a golden age for the generation about to come.

THINGS FROM THE PAST

The land of Turkey looks out on the present from a historic past that is the study of all ages. The epics of Homer are concerned with events on the plains of Troy, at the mouth of the Dardanelles. Along the shores of Asia Minor sailed Perseus, and the Argonauts sought the Golden Fleece on the southern coast of the Black Sea.

Crœsus obtained his fabulous wealth by sifting the river sands that brought down grains of gold from the mountains back of Smyrna. Alexander the Great defeated the Persians in northern Syria, and Babylon, on the Euphrates, was the capital that proved his undoing.

Chaldea and Babylonia, richest and most powerful nations of antiquity, were the lower Mesopotamia of today. Their wealth did not consist primarily in tributes levied on subject nations and in plundered temples, but in the riches of the soil of the Tigris and Euphrates Valley. The land of the Nile has always been famed for its marvelous productivity, but its soil is no more fertile and its fields only one-fourth as extensive as those of Mesopotamia.

Wonderful systems of irrigation once watered the plains and made Babylon and its territories the granary and the garden of all the eastern world. When the distinguished engineer, Sir William Wilcox, was called upon to survey this region for present irrigation development, his final report contemplated little more than a rehabilitation of the ancient systems of the Babylonian days.

The power of the city of Antioch reached north and south and east. It was, perhaps, the most beautiful city of Hellenic times and certainly the most luxurious. After the Scipios broke its power in Asia Minor and Rome ruled the world, Antioch became the vice-regent for Rome, ruling over all the eastern world. It was known as "The Gate of the East," through which flowed the Roman conquering legions and from which eastern luxury undermined the foundations of western power. "The waters of the Orontes contaminated the Tiber," as one ancient sage observed.

THE INFLUENCE OF CONSTANTINOPLE ON WORLD EVENTS

On the banks of the Bosphorus Constantine founded his world capital, and from that day to this the Byzantine and Turkish city has figured in all great world

Photograph by Frederick Moore

EXILED

Turkish political and other prisoners being shipped to a penal colony. "The one change that must precede all others before the possibilities of this land and these people can be realized is to rid the country of its present rulers."

movements. It has been the center of intrigues and treaties, of councils and conspiracies, around which have circled the policies of Europe for the last sixteen hundred years.

Within the bounds of Turkey also lay Phœnicia, the synonym for commerce and trade. From the shores of Syria the merchants of Tyre and Sidon sent their fleets of ships, trafficking with all the world. Located in the pathway between Egypt and Babylon, it was the ideal position for trade; while the western world, along the Mediterranean shores, was an ever-growing market for the wares of the east. With the instinct of merchants, the people of Syria made the most of their wonderful geographic position to become the first great shop-keeping nation.

And this land still remains the connecting link between the three continents, and across it should still lie the highways of trade between the east and the west, the north and the south.

Where Turkey joins to Egypt is Palestine. No spot of earth in all the world bears such memories for so many and such a variety of peoples as the rugged mountain slopes, narrow valleys, and half desert wastes of Judea and Galilee. Beersheba, Hebron, Bethlehem, Nazareth, Jerusalem—the mere mention of these names tells the story of Abraham and Moses and David, of the prophets of Israel and of the Son of Man.

THE PRICE OF NEGLECT AND INJUSTICE

Kings and priests and people come from the north and the south, from the east and the west, and "bring the glory of the nations" to do homage to the memories that cluster about these sacred shrines.

What a land, then, is that comprised

Photograph by H. G. Dwight

HAULING FREIGHT FROM THE CUSTOM-HOUSE: CONSTANTINOPLE, TURKEY

within the limits of the Turkish Empire! Out of its past speaks military power and material wealth, literature and art, philosophy and religion. And that land which today lies desolate, with its marvelous natural resources neglected, and its people, who were the glory of the past, repressed by injustice, cruelty, and tyranny — that land possesses today the same elements for material and spiritual greatness that made it the first to develop a modern civilization.

The same broad plains that once fed and clothed a population of 40,000,000 human beings are waiting today for the plow, the seed, and the reaper. The mountains still hold riches of coal and iron and copper. The quarries still have abundance of choice marbles. The rivers are potent with power to turn the wheels of industry. The natural harbors invite the fleets of merchantmen and the river valleys and mountain passes offer natural lines of communication and transportation, as in the days when great caravans passed along these natural highways, bringing the merchandise of the east to the markets of the west.

The whole land has been lying fallow for centuries—a land that modern exploration reveals as one of the richest in natural resources and as unsurpassed by its geographic location for being the trade center of the world.

THE LAND AND ITS PEOPLE

Exclusive of Arabia, which has never been more than nominally under the Ottoman dominion, the Turkish Empire, as at present constituted, embraces about 540,000 square miles of territory. Only about 10,000 square miles of this are in Europe. The Turkish Empire is equivalent to the combined areas of the British Isles, France, and Germany. It is larger than all of the area east of the Mississippi and north of the Ohio and Potomac rivers.

The territory included in our Southern Confederacy is hardly equal to the

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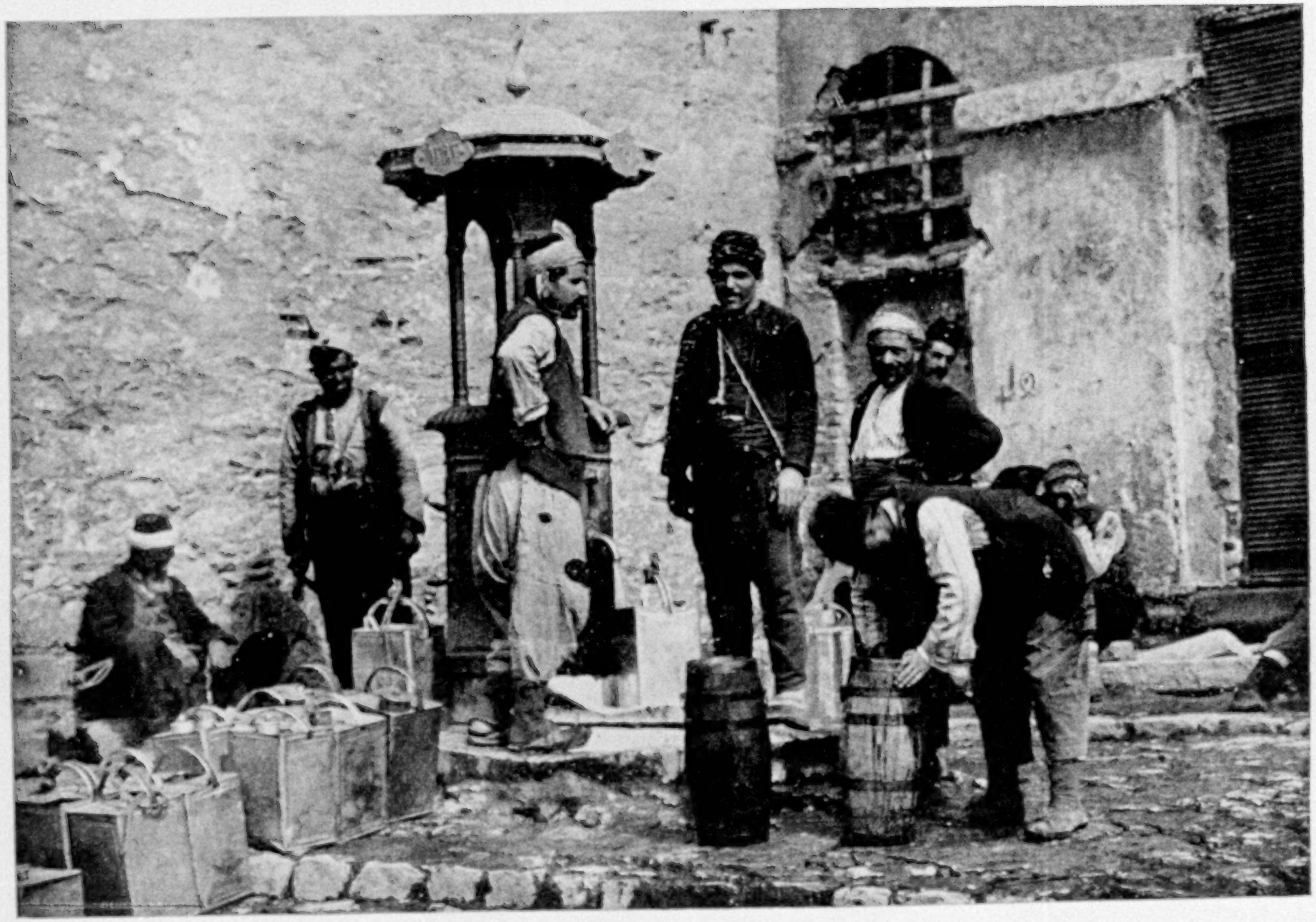
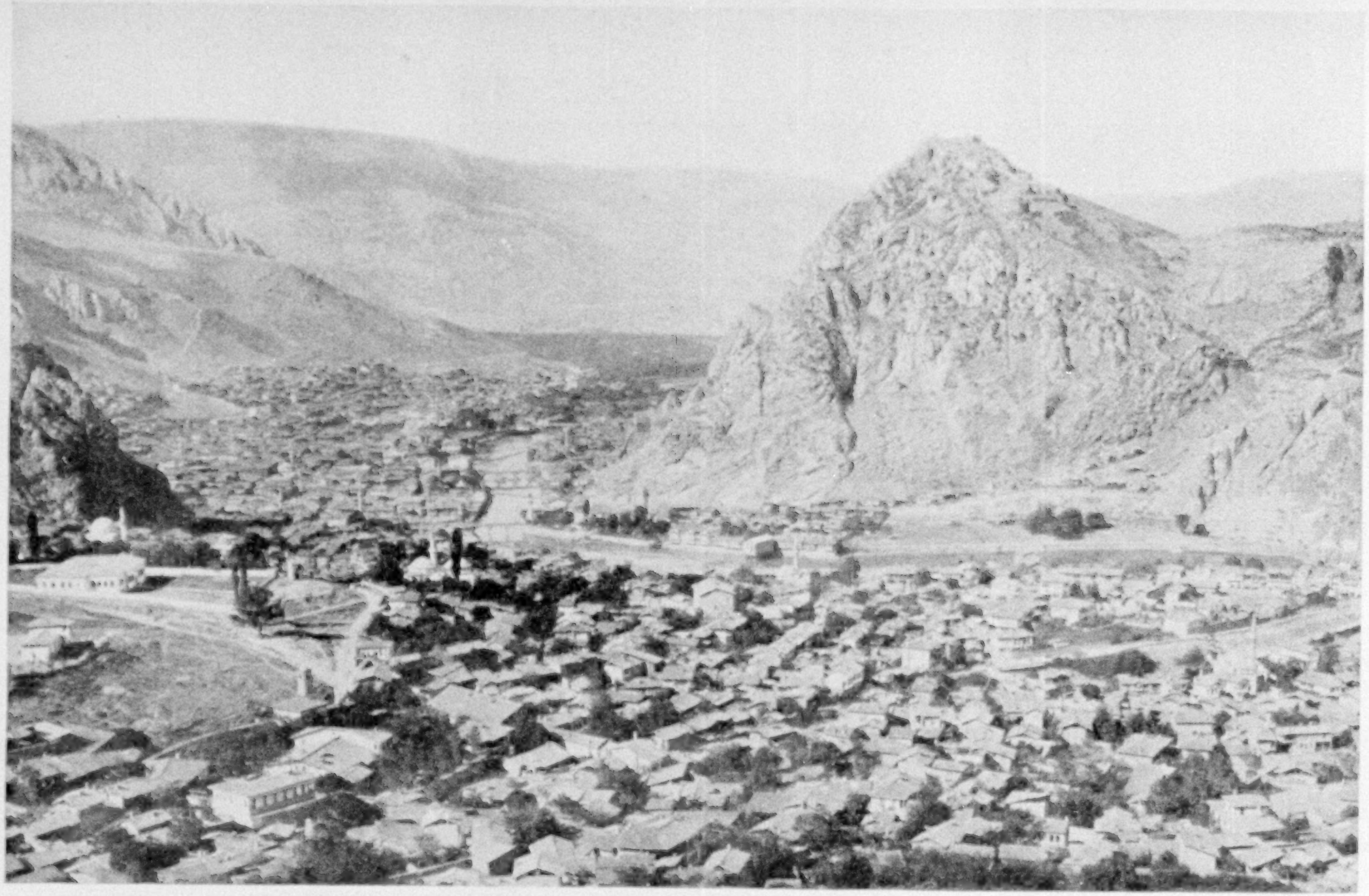
CONSTANTINOPLE: ONE OF THE TWO PONTOON BRIDGES ACROSS THE GOLDEN HORN, CONNECTING THE OLD SUBURB OF GALATA WITH STAMBOUL

Founded by the Dorians in 660 B. C. as the colony of Byzantium, Emperor Constantine the Great chose the city as the capital of the new Roman Empire, on the threshold of the East, in 328 A. D. It stood as the easternmost outpost of Christendom for eight centuries until it fell before the Moslem sword of Mohammed the Conqueror in 1453, since which time it has been the Turkish capital. The conspicuous building in the middle background is the Galata Tower.



A PUBLIC WELL IN CONSTANTINOPLE

The Near East has adopted the American oil-can as a water receptacle in place of the picturesque jar of pottery, once universally used



Photograph by George M. Kyprie

AMASIA, ONCE THE CAPITAL OF THE PONTINE KINGDOM

The fortress has been used until recently by the Turks, but is now abandoned. Through the city flows the River Yeshil-Irmak, or Iris, which is frequently mentioned by the Greek geographer, Strabo, who was born here. Amasia rose to fame in the time of Alexander the Great. The river is spanned by seven bridges, four of which are from the Roman period, the remainder being modern.

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Photograph from Janet M. Cummings

AN AMERICAN WARSHIP IN THE HARBOR AND STRUCTURAL STEEL ON THE DOCKS AT BIERUT, SYRIA

Beautifully situated on the south side of St. George's Bay, Beirut is the chief commercial city in Syria, and, since the construction of waterworks in 1875, has been considered the healthiest town on the Syrian coast. It was early the scene of fanatical demonstrations in the world war, Moslem priests urging the killing of "infidels" on the first appearance of hostile fleets. At the beginning of December, 1914, the Turks demanded $20,000 from the American College at Beirut. There were 23 Mohammedan mosques and 23 Mohammedan boys' schools in Beirut, compared with 38 Christian churches and 67 Christian schools at the outbreak of the war.

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HAREMS OF CONSTANTINOPLE

Not many Americans have seen the quaint, narrow streets of the residence section of the Turkish capital. The photograph presents an every-day scene. The street leads from St. Sophia's Mosque to the Bosphorus, and each house shown has its harem. At the bay windows on the fronts of the houses the odalisques stand and gaze into the street at passers-by. The lattices effectually prevent any person on the outside from seeing the inmates. The ever-present American oil-cans in the Near and Far East are to be seen in the right foreground. It is also interesting to note that a touch of appetite makes Turkish youth and Southern darky kin—observe the gusto with which these Mohammedan boys are attacking slices of melon.

present Ottoman Empire, not including Arabia.

The boundaries are the Black Sea and Caucasus on the north, Egypt on the south, the Ægean and Mediterranean seas on the west, and the Syrian Desert and Persia on the east. Turkey in Europe is almost a negligible area, as the Balkan war stripped the Turks of all their European possessions except Constantinople and a narrow territory along the Bosphorus and Dardanelles, some 40 miles in width; so that when the Turkish Empire is now referred to Asiatic Turkey is all that the term embraces except the city of Constantinople and a small amount of adjacent territory.

Roughly speaking, Turkey is divided into five great provinces, or districts—Anatolia, Armenia, Kurdistan, Mesopotamia, and Syria.

Anatolia (the name is from a Turkish word meaning "the dawn") lies between the Black and Mediterranean seas. This district is the home of the greater part of the Turkish population, perhaps 7,000,000 in all. Here is a case where the people can be distinguished from the government. Even the so-called subject races have suffered but little more at the hands of the governing officials than the common Turkish people.

ALL GOVERNMENT IN THE HANDS OF 300 MEN

When one remembers that all government of the Empire lies solely in the hands of a group of not more than 300 men, and that they impose their selfish will on Turk and Christian alike, one readily understands how a distinction can be made between people and government. In spite of a constitution having been proclaimed and a parliament summoned, the people, whether of Turkish or other race, have absolutely no voice in the affairs of the nation.

Armenia, east of Anatolia, extending to the region of the Caucasus and the Persian border, is the site of the ancient Kingdom of Armenia. The population is not wholly Armenian—in fact, even before the war the majority of the people were Turks and Kurds—but here the bulk of the Armenian race was found.

It is a rugged land, a succession of mountains and valleys, where the people have had to contend with nature for the establishment and maintenance of their homes; but, like all highland countries, it has been the means of producing a religious, freedom-loving people.

They were the first nation to embrace Christianity when, in the latter half of the third century, their king, Tiradates, accepted the new faith, and most of the nation followed him. Throughout all the succeeding centuries they have remained steadfast against wave after wave of persecution, until this last storm of hate and fanaticism has swept the greater part from their homes and has destroyed at least a million—two-thirds of the entire people.

THE LAND OF SALADIN, THE KURD

Kurdistan, a hill country north of the Tigris River, is the home of a brave, virile, largely illiterate series of tribes and clans known as the Kurds. They are the descendants of the Cardushi, who gave Xenophon and his ten thousand so much difficulty on their march across these same hills on their way to the sea.

Nominally they are Moslem in religion, but they have retained many elements of heathen worship. Some of their tribes are "Yesdi," or devil worshipers. They are home-loving, frugal, and capable of enduring great hardships. They practice strict monogamy and their women occupy an equal place with their men in the family life.

The Kurds have furnished at least one great man to history, for Saladin, the chivalrous leader of the Saracen hosts, the compeer of Richard Cœur de Lion, was from this people.

Mesopotamia, Upper and Lower, vies with Egypt in claiming the honor of being the home of ancient civilization. It comprises the valleys of the Tigris and Euphrates rivers. Here flourished the Chaldean, Babylonian, and Assyrian empires. The city of Bagdad, with all its glamour of mystery and magic, is in the heart of Mesopotamia.

ONCE THE RICHEST LAND IN THE WORLD

This was the richest land in the world, the granary of the ancients; yet, in spite of all that it has been, it today lies largely

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THE WALLS OF NINEVEH: MESOPOTAMIA, TURKEY IN ASIA

Out of the past of this land, now ruled by the Turk, speaks a glory of military power, material wealth, literature and art, philosophy and religion. Centuries before the Christian era, a regularly appointed librarian had charge of the library of Nineveh's King Ashurbanipal. That institution was open to the public, for Ashurbanipal himself recorded: "I wrote upon the tablets; I placed them in my palace for the instruction of my people."

waste, the desert sands have encroached upon the fertile fields, while the clogged canals have turned other portions into swamps and marshes.

What population there is—not more than one million—is of Arab origin and the Arabic language is spoken throughout. There is, in fact, a very distinct dividing line between the Arabic and the Turkish-speaking portions of the Ottoman Empire. This boundary corresponds with the line of the Bagdad Railway from the Mediterranean to the Persian Gulf. It is for the exploitation of this rich land of Mesopotamia that the famous Bagdad line was built.

Syria, the region extending from the Taurus Mountains to Egypt and from the

desert to "the Great Sea," needs no identification. It is the land of the patriarchs and prophets and apostles—"the Holy Land." Its population numbers about three and a half millions, of Semitic origin, speaking the Arabic language, and yet with so many races intermingled through the centuries of the various conquests and occupations that the people cannot claim any one race as their own. Greek, Roman, and European Crusader have all blended with the ancient Semitic stock to produce the Syrians of today, whom Lord Cromer, in his Memoirs, termed "the cream of the East."

In Syria was the one green spot of Turkey—the Lebanon Mountains. In 1860, because of massacres, the European Powers insisted that these mountains be made autonomous. And since that date this little district has been a living demonstration of what good government will produce and of what the people of the land are capable of becoming.

The steep mountain sides have been terraced to a height of 4,000 feet and planted to olives, figs, and vines. Taxes have been low, safety to person and property secured, good roads built and kept in repair. The people have constructed more comfortable homes and have sent their sons to schools and college.

The story of the achievements of the Lebanon and its sons during these sixty years of autonomy would be a thrilling narrative in itself. Now that autonomy has been taken away, the Lebanon is prostrate in famine.

NATURAL FEATURES

Practically the whole Turkish Empire is of the same surface configuration—high mountain ranges along the sea-coast, with elevated plain and plateau in the interior. These inner plains are generally fertile, being constantly renewed by soil washed from the surrounding mountains. Where rain is sufficient, or where water can be obtained for irrigation, they produce fine crops of grain.

In ancient times the mountains were everywhere covered with forests. The cedars of Lebanon not only furnished timber for the building of Solomon's Temple in Jerusalem, but the kings of Egypt annually floated large rafts of logs from the Syrian coast to supply the demands of the cities of the Nile. This constant demand from foreign lands, together with the lack of any system of reforestation, has practically denuded the mountains of the whole land.

Once more to cover the mountains and hills with pine and cedar and oak would be a simple task if carried on systematically. The chief enemy today of reforestation by nature is the herds of goats, which every spring roam over the whole country and devour every green thing. The little seedling trees suffer especially.

POPULATION OF THE OTTOMAN EMPIRE

The population of the Ottoman Empire, not including Arabia, is about 18,000,000, or was before the war. In giving statistics on any subject regarding Turkey one speaks in approximate terms, for only estimates can be given, as no thorough census is taken or other statistics systematically gathered. Among the various races this total was distributed as follows: Turks, 7,000,000; Syrians and Arabs, 4,500,000; Kurds, 2,000,000; Armenians, 2,000,000; Greeks, 1,500,000; Jews, 500,000; other races, 500,000.

All of these peoples can trace their history back to the period when fable and legend blend with the beginnings of historic facts. And all, except the Turks, have inhabited, from time immemorial, the districts in which they are now found.

These races represent the three great monotheistic religions, which have also originated within the boundaries of the Turkish Empire. About two-thirds of the entire population are Mohammedan, but of different sects. The Christians, also, are divided into many sects, representing nearly all the great divisions of the church.

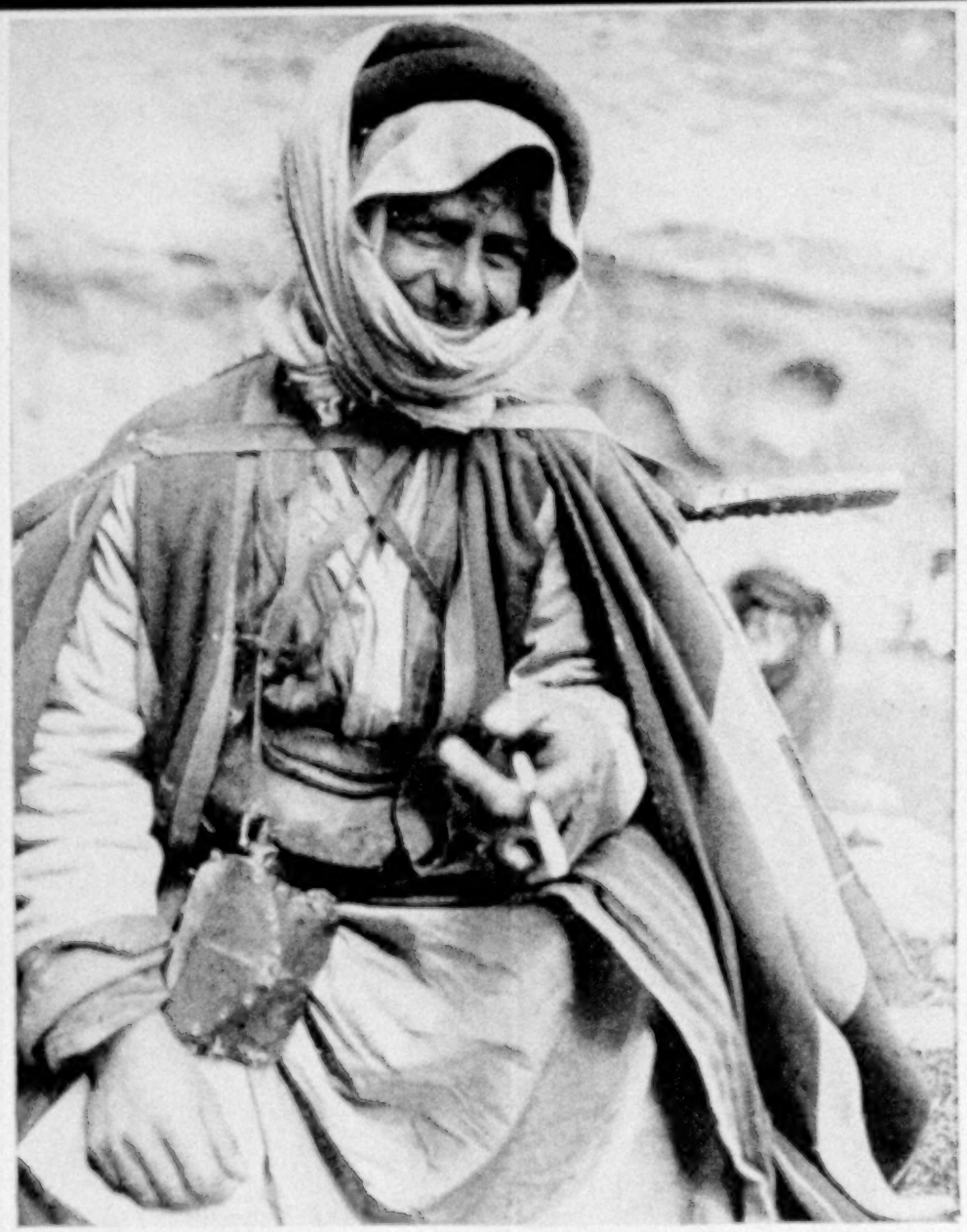
The Christian races are the most progressive part of the population; they have been most responsive to education and have made some progress in establishing schools of their own. The Turks are the most backward of all; yet under proper encouragement and facilities they are capable of good progress. In competition with Greeks, Armenians, and Syrians, however, they invariably fall behind.

It should be noted that of 48 Grand Viziers who have risen to prominence

Photograph by Mortimer J. Fox

MENDING "AL FRESCO": CONSTANTINOPLE, TURKEY

"Turkey has never been a manufacturing country, but has shipped abroad her raw materials—silk and wool and hides—and has received them back in cloth and shoes. With the water-power of its mountain valleys harnessed, future generations would see their land transformed. But the greatest resource of this country arises from its geographic position. Three arms stretch out in three directions—one to 'the continent of the past,' one to 'the continent of the present,' and a third to 'the continent of the future.'"



Photograph by D. Carruthers

AN ARAB OF THE BENI SAKHR TRIBE

Baron de Larrey, who was Napoleon's surgeon general on the latter's Egyptian and Syrian expedition, has paid this tribute to the Arabs: "Their physical structure is in all respects more perfect than that of Europeans; their organs of sense exquisitely acute, their size above the average of men in general, their figure robust and elegant, their color brown; their intelligence proportionate to their physical perfection and without doubt superior, other things being equal, to that of other nations." This people has recently revolted against Turkish oppression (see page 66).

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Photograph by George M. Kyprie

THE ARMENIAN CITY OF HEREKÉ, EAST OF AMASIA

Armenia is a succession of mountains and valleys where the people have had to contend with nature in the establishment and the maintenance of their homes. It was the first nation to embrace Christianity.

Photograph by Helen E. Jacoby

NATIVE STREET TYPES IN SMYRNA

With the exception of Damascus, Smyrna is the largest city in Turkish Asia. This, the chief seaport of Anatolia, has a population of more than 200,000, of which fully one-half are Greeks, 60,000 are Turks, 20,000 Jews, 12,000 Armenians, and 15,000 Europeans and Levantines. In November, 1914, diplomatic relations between the United States and Turkey were strained for a time, when a Smyrna shore battery fired on a launch from the U. S. S. *Tennessee*, which had been dispatched to European waters to assist American tourists in returning home. Turkey's explanation was that the shots were fired not with hostile intent, but to warn the launch that the harbor was mined.

within the past four centuries, those whose names would be in history's "Who's Who," only 12 have been Turks; all the others were either of Greek or Armenian origin.

Taking the country as a whole, the percentage of illiteracy is between 80 and 90. The government educational program is very comprehensive, but exists largely on paper. The Turk is able to dream great dreams, but amazingly unable to bring those visions to reality.

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THE VARIED RESOURCES

All of the varied resources that contributed to make the nations of antiquity materially great are still available for the future enrichment of the people dwelling in those same lands.

Herodotus, writing of Lower Mesopotamia in the noontide of its prosperity, declared: "It is far the best corn land of all the countries I know. It is so superb that the average yield is two hundred fold, and three hundred fold in the best years. But I will not state the dimensions (of the plants) I have ascertained, because I know that for any one who has not visited Babylonia and witnessed these facts about the crops for himself they would be altogether beyond belief."

In the days of the early Caliphate an inventory showed some 12,500,000 acres of land under cultivation; and Sir William Wilcox in his report, "The Irrigation of Mesopotamia," published in 1911, states that the Tigris-Euphrates delta is an arid region of some 12,500,000 acres, but capable of easy leveling and reclamation. The Arabic name for this region is *Sawâd*, which means the black land.

And northern Mesopotamia is equally rich in possibilities. In ancient days this was a district "so populous and full of riches that Rome and the rulers of Iran fought seven centuries for its possession, till the Arabs conquered it from both," writes A. J. Toynbee.

The same author points out that "in the ninth century A. D. northern Mesopotamia paid Harun-al-Rashid as great a revenue as Egypt, and its cotton commanded the market of the world." It is well known that our word muslin is derived from the name of the city Mosul, in Upper Mesopotamia.

SPLENDID POSSIBILITIES; NEGLECTED RESOURCES

And why should this land not be producing as well as ten centuries ago? The soil and the climate have not changed. The rainfall and the water for irrigation are just as abundant as in the days of old. The people are the same that lived then in the land, equally industrious and thrifty. Why have the past four centuries laid a blight over the fairest corn land of the east?

But it is not Mesopotamia alone that offers agricultural returns in the Empire of Turkey. There are the fertile seacoast plains of ancient Philistia, the uplands of Moab and Ammon, the wheat fields of the Hauran south of Damascus, and the great valley between the Lebanon and Anti-Lebanon, in Syria; the whole elevated plateau of central Asia Minor, with Konia (ancient Iconium) as its center. There are the fertile river valleys and hillsides of Armenia and Kurdistan, together with the famous Cilician plain and the regions about Smyrna and Broussa.

Not only grain of every kind rewards the industry of the peasant, but also fruits of every variety, semi-tropical and temperate, are easily produced. Who has not eaten of the figs of Smyrna and the dates of Bossrah or heard of the grapes of Eschol?

PRIMITIVE METHODS OF AGRICULTURE

The first interest of the Turkish Empire is agricultural. From north to south and from east to west it offers splendid opportunities to the farmer. And these lands in great part lie uncultivated. Reservoirs for the storage of water and other irrigation works that might change desert acres to producing fields are not constructed.

The most primitive modes of cultivation are still in use—the ox-drawn plow of Bible days, the cutting of great fields of grain with the sickle, the threshing-floor, where wheat is trodden out by the hoofs of animals; the slow and painful hand labor, with clumsy instruments, that yields but a minimum of return for the effort expended.

It is all a tale of splendid possibilities, but of neglected and undeveloped resources. Yet it is a promise to the future generation of boundless productivity and of untold wealth in store for progressive industry and a benevolent government.

The marvelous resources of this Empire are not comprised in its agricultural possibilities alone. The story of Crœsus gathering gold from the river sands is not an idle tale. Just this year an American missionary writes: "Grains of gold are frequently found in the gravel left after the torrential floods."

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Photograph from Charles K. Moser

SOLDIERS OF THE DESERT

These Arabs are devout Mohammedans, but their country is only nominally under Turkish suzerainty. Not long ago the world awoke one morning to hear that a new nation had been established—the Kingdom of Hejaz. The Grand Sherif of Mecca had revolted against Turkish rule, and with the help of men like these had thrown off the Ottoman yoke.

Of course, no complete and thorough survey has ever been made of the mineral wealth of Turkey. But German maps (and who has studied Asia Minor more thoroughly than the Germans?) mark deposits of coal, copper, iron, silver, gold, and lead, with many of the lesser minerals, such as chrome, emery, manganese, mercury, rock-salt, and sulphur. These are not noted on the map in scarce and isolated localities, but the various deposits occur with such frequency as easily to explain the German zeal for cultivating friendship with Turkey.

The American missionaries resident in the country give unanimous testimony to the mineral deposits. An American professor in one of the colleges writes: "The copper deposits at Arghuni Maaden are wonderfully rich and extensive. The mine now being worked contains 70 per cent of copper, of which about one-half is recovered by the crude method of smelting in use. Ore containing 30 to 50 per cent is thrown away as useless and mountains of such waste surround the mine."

An American doctor states that "the mineral resources of Konia are certainly very great. There are silver mines, lead, and some gold; there are mercury mines a few hours from Konia, while chrome, cinnabar, lead, emery, manganese, and rock-salt are found in the province."

THE MOUNTAINS STILL FULL OF VALUABLE ORE

The president of one of the American colleges in Asia Minor reports: "In this region there are known to be deposits of silver, coal, and copper. I once asked an old Greek up among the mountains about his mining experiences, as we were picking our way together among the slag of some abandoned silver mines. He told me he had spent years under ground. I

asked him whether the mines had closed because the mineral was worked out. 'Whew,' he replied, with an expressive gesture, 'the mountains are full of it.' He did not speak with scientific information, but he had had the experience of a practical miner."

These are a few of the statements made by trained Americans who have spent their lives in the regions of which they write. And all that they tell and more is abundantly substantiated by the reports of the German engineers who have been making extensive surveys for their government.

The question arises, How has it been possible for these riches to have remained undeveloped at the very door of Europe? It does seem impossible, but the true answer is given in this sentence from one of the missionary reports: "There are hopeful indications of various other minerals at other places also; *but the Turks have always discouraged attempts at developments.*"

PETROLEUM DEPOSITS

It is well known that the extensive petroleum deposits along the Persian frontier were a principal cause of England's desire to participate in Persian politics not many years ago, and the possession of these oil fields has been one of the chief objects of military contention between the Turkish and British in their Mesopotamian campaigns.

There are other rich prospects for oil in widely separated parts of the Empire. After careful examination one expert reports: "German engineers have made very thorough surface examinations of this district and had great anticipation for developing large oil fields throughout Mesopotamia. There have been found favorable indications for the development of petroleum areas in several parts of Asia Minor, especially in Syria and Mesopotamia. The indications in Syria are perhaps as promising of rich oil deposits as any in the world."

But here again one comes against that stone wall that has blocked all progress of development, for the report quoted above concludes: "The complete determination of the petroleum supply of Asia Minor must await the return of a stable government, upon whose permanency and good faith capital can rely and which will be capable of establishing law and order throughout the territory in question."

WATER POWER

The Abana, one of the rivers of Damascus, in beautiful cascades, falls from the Anti-Lebanon Mountains to the plain below. A few years ago these waters were gathered into conduits up among the highlands and passed over waterwheels. Now they are not only irrigating the groves of apricots which surround the city, but, doing double duty, are also lighting the great mosque and the city streets and moving electric cars through the oldest city in the world.

What has been done with this mountain stream can be repeated over and over again throughout the land. Turkey possesses an unmeasured power that could be developed from the rivers that rush from the highlands to the sea. Often these streams are great rivers—the Tigris, Euphrates, or Kizl Irmak—flowing through narrow gorges, surging along with mighty force, fed by the eternal snows of Ararat, Taurus, or Lebanon.

Turkey has never been a manufacturing country, but has shipped abroad her raw materials—silk and wool and hides—and has received them back in cloth and shoes. With this water-power harnessed in its mountain valleys the future generation might see their land not only a source of agricultural and mineral products, but also a transformer of these into forms all ready for the markets of the world.

COMMERCIAL ADVANTAGES

But perhaps the greatest resource, after all, of this country arises from its geographic position. Three arms stretch out in three directions—one to "the continent of the past," one to "the continent of the present," and a third to "the continent of the future."

Can there be found anywhere else in the world a position so naturally suited for commanding the world's trade? And in the development of the people who have been nurtured in this land this characteristic of trading ability has been bred.

The Phœnicians sailed to the farthest

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seas and made Sidon and Tyre the world centers for commerce. The Greeks, putting out from their islands near by the Asia Minor shore and from Ephesus and other cities of the mainland, were the great carriers and traders of ancient times. We read that King Solomon, taking advantage of his location beween Egypt and Assyria, carried on a great business of mercantile exchange between these empires and became a merchant prince, whose renown spread to the corners of the earth. Following in the footsteps of their ancestors, the people of those lands, the Syrians and Greeks and Armenians, have established a reputation as traders the world over.

The great trunk lines of commerce between the north and the south and the east and the west should pass across this country. In years gone by all the nations of Europe maintained commercial representatives and warehouses in the city of Aleppo. This center was the mart of exchange between Europe and the eastern lands. That position could easily be recovered and surpassed, for the city lies at the natural point of meeting of the great world trade routes.

SPLENDID NATURAL HARBORS

There are natural harbors which with little engineering could become suitable terminals for the land routes. In constructing the Bagdad Railway Germany had obtained a concession to construct a harbor and stores at the city of Alexandretta, near to the place where Alexander defeated Darius, King of Persia. Germany was also to have the privilege of policing this port with her own subjects.

The importance of Beirut, Tripoli, and Smyrna as ports has already been recognized and they are destined to increase. Constantinople is perhaps the finest harbor in the world, and at this point must pass most of the trade between Europe and Asia.

Asia Minor has been and still should be not the bankrupt nation, but the banker nation of three continents.

With each of the topics here presented there has always been an "if" or an "ought to be" or "might become." Turning the pages of history, one reads what this country has been. Reading the daily papers, one knows what the country is. Letting imagination dwell upon the resources provided by nature and the capabilities of the people, one can form a vision of the country's future if only one great change can be brought about.

In 1453 Mohammed the Conqueror surrounded the city of Constantinople and finally caused the downfall of that city, which had stood for eight centuries as the eastern outpost of Christendom. In 1517 the city of Jerusalem and the land of Egypt also fell.

The succeeding 400 years have witnessed the gradual degradation of the land. The cotton and corn fields of Mesopotamia are now deserts and swamps. The mines once worked have been abandoned. The cities, once busy with the trade of the world, are today but bazaars for petty bargains and deceit. The people, with the history of a great past and with capacities second to none, are by injustice and persecution driven from their homes to foreign lands or subjected to a determined plan of extermination by deportation, massacre, and famine.

The one change that must precede all others, therefore, in order to take the first steps toward realizing the possibilities of which this land and these people are capable is to rid the country of its present rulers. It is not merely to "drive the Turk out of Europe," for that has practically been done already, but to deprive him of every vestige of authority. Not only have the Christian races suffered at his hand, but the common Turkish people themselves have suffered almost equal wrongs. Before all bars of judgment, because of his incapacity, his inefficiency, and his atrocities, he has forfeited every right to rule.

THE PARABLE OF THE UNPROFITABLE SERVANT

The parable tells of the servant who, having failed to develop the one talent entrusted to him, had this judgment passed upon him: "From him that hath not shall be taken away even that which he hath. And cast ye the unprofitable servant into outer darkness." And there is no longer one judgment for individuals and another for governments.

This one change having been made and the forfeited talent having been given to a government that has proved its ability, then the dream for these long-oppressed lands can become a reality. But this change should not mean the handing of Turkey over to be divided up into "spheres of influence" to satisfy colonial ambitions, no matter how long cherished, nor the breaking up of the country into a series of petty States, thus repeating the Balkan menace; but it should mean giving this land a good reorganizing government backed by the much-hoped-for League of Nations.

With this good government the country, which has long been an unsanitary plague spot, a constant health menace to Europe, will be cleaned up; adequate schools will be provided; courts of justice will replace those of injustice; proper means of transportation will be constructed; industries will spring up and the resources of mountain and plain will contribute their share to the support of the world.

"Then shall the wilderness blossom as the rose" and "every man shall sit under his own vine and under his own fig tree and none shall make them afraid."

A DAY WITH OUR BOYS IN THE GEOGRAPHIC WARDS

By Carol Corey

Author of "From the Trenches to Versailles" and "Plain Tales from the Trenches"

The splendid work which the members of the National Geographic Society are supporting is described by the author, who reveals the brave and cheerful spirit in which American youths endure their wounds and faithfully records the language in which they express their appreciation of the provisions which have been made for their care and comfort.

THE first time I visited what used to be called the American Ambulance Hospital at Neuilly, just outside of Paris, and what is now American Military Hospital No. 1, I lost a lot of my horror of such places.

It was a glorious afternoon in early spring. On almost every street corner an old woman was selling flowers. There were marguerites and tall, graceful sprays of tiny button-roses, and a perfect wealth of lilacs. I bought a great many of the lilacs, though they were expensive, for I knew that our boys would like them better than most anything else. They're such a homey flower. The scent of lilacs recalls the yard at home and stands for the reawakening of spring and all that that means.

I told my particular old lady that the lilacs were for the American wounded, and she sniffed and said she hadn't heard there WERE any. The taxi driver demanded an extra franc-fifty for what HE called a supplement, though I called it a hold-up.

At the hospital I found less than fifty soldiers—a few slightly wounded, the rest sick only. The warm, sweet breeze was swaying the curtains, and the new leaves on the trees just outside the windows were sparkling after a heavy shower. The nurses were reading or embroidering, and I remember one fellow said it smelled "just like fishin' time." Another assured me that although the Yanks had done nothing as yet, "it wouldn't be long before Fritzie 'd know they were in it."

And it wasn't. A few weeks later I made my second trip to Neuilly. The lilacs had long since disappeared, but I was able to take an armful of sweet peas of every color. I bought out all that one stand held, and when the little apple-cheeked vender asked me why I needed so many I told her. She insisted upon taking two francs off the bill. "I am

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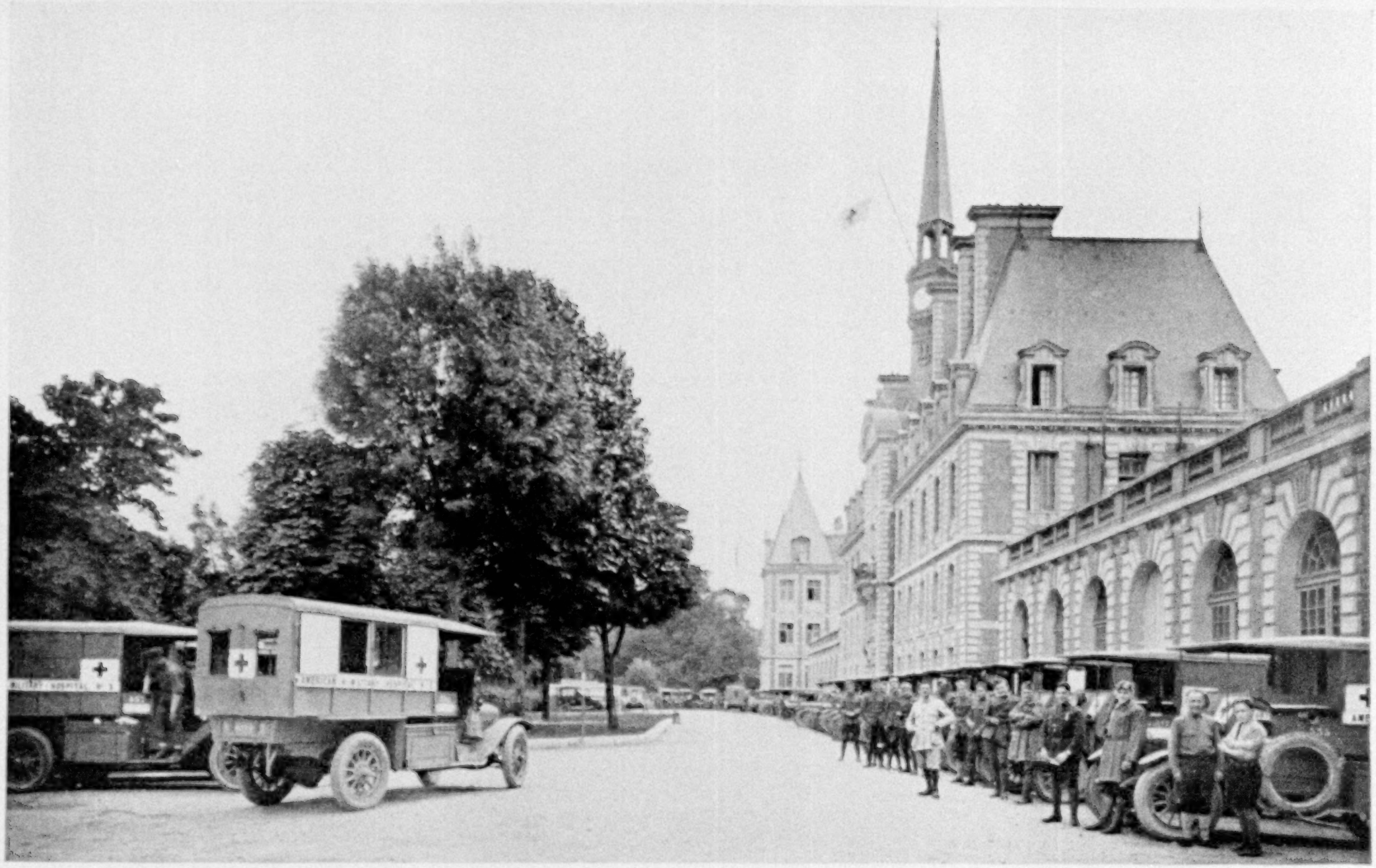

Courtesy of the American Red Cross

THE ENTRANCE TO AMERICAN MILITARY HOSPITAL NO. 1 AND ITS FLEET OF AMBULANCES WHICH BRING THE WOUNDED FROM THE HOSPITAL TRAINS AS THEY ARRIVE FROM THE FRONT

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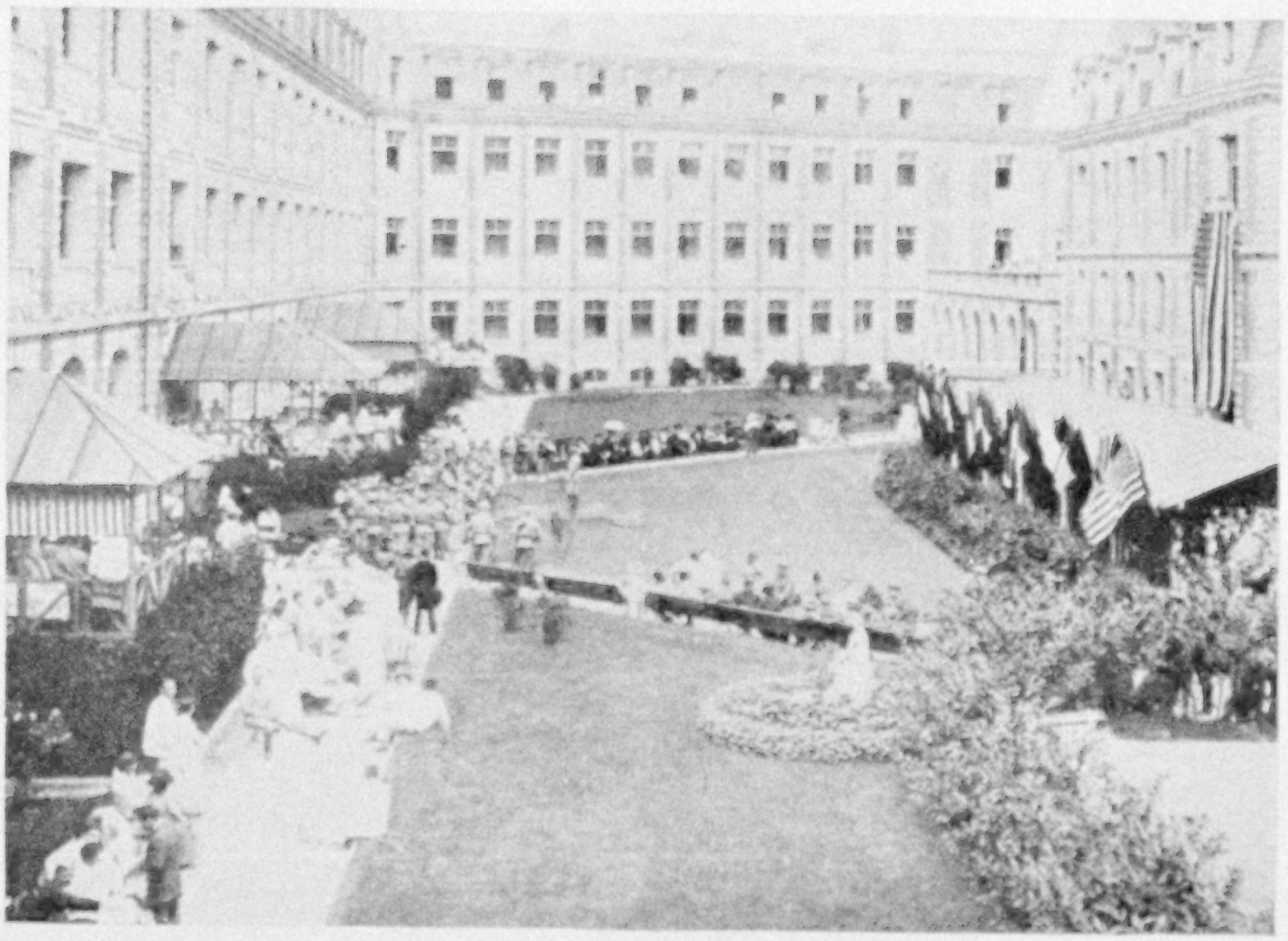
Courtesy of the American Red Cross

ONE OF THE WARDS MAINTAINED BY THE MEMBERS OF THE NATIONAL GEOGRAPHIC SOCIETY

These photographs were taken before the supplies donated by the splendidly patriotic and sympathetic ladies of the National Geographic Society throughout the country were received overseas. The many afghans, quilts, convalescent jackets, pajamas, bath-robes, slippers, handkerchiefs, and other articles have now arrived in France and are adding to the comfort and contentment of America's wounded.



Courtesy of the American Red Cross

A SCENE IN THE CONVALESCENT COURT OF THE AMERICAN MILITARY HOSPITAL AT NEUILLY, PARIS

With its fluttering flags, its brilliant flower-beds, and its gayly awninged shelter porches, this recreation court for America's wounded in Paris resembles the scene of a garden fête. This is the concert hour, music being furnished by a military band.

poor," said she, "but for the American soldiers, would that I could do more!"

The villainous-looking individual in the fiery red vest who drove my taxi said there OUGHT to be a supplement, but inasmuch as I was going to see the saviors of France, the least HE could do was to refuse to take it.

He deposits me in front of the main entrance and I stand at the top of the steps to glance about the courtyard. A dust-covered ambulance is backing in slowly and carefully. The youthful driver jumps down and calls to some one inside the building, "Here's four more fer ye. What'll I do with 'em?"

Whoever is addressed sings back, "Can they walk?" And the answer comes, "I'll say they can't."

Behind this ambulance comes another, and behind that one comes a third, until I count nine all told. I ask the nurse beside me if she thinks I'll be in the way, but she smiles and says, "Why, how absurd! This is only a handful."

A doctor steps up to supervise the unloading. From him I learn that never has the hospital been so crowded as now. It is supposed to care for one thousand, but three hundred extra beds have been added, and "if they keep coming we'll surely have to put them on the roof."

He points out the two great tents hastily erected on the terrace and says that the operating rooms have not been empty for three days and nights. Everybody is dead tired and consequently nervous—that is, everybody but the soldiers. They're the best dead-game sports in the world.

"But come in and see for yourself," he adds.

A CONSTANT PROCESSION OF STRETCHERS

We pick our way through interminable hallways between what seem to be miles

Courtesy of the American Red Cross

DOING HER BIG BIT FOR THE ARMY

A member of the American Home Communication Service, in one of the National Geographic Society Wards, receiving instructions from a wounded soldier about the letter home (see page 79).

of beds. On each is a suffering, bandaged boy. Sometimes it's hard to see the boy for the bandages. Occasionally, when the wound is in the spine, the poor invalid is lying face downward, strapped to a board. Even so, there is always the smile of thanks for the cigarette, the flower, or the magazine.

We pass an endless number of open doors, through which I see many more beds and many more boys. We stand close to the wall to allow a rubber-tired stretcher to be wheeled by. It stops before the operating room, and the one on it, in answer to my encouraging wave, throws me a kiss. There seems to be almost a constant procession of stretchers, for thirteen hundred wounded require countless dressings.

One husky lad in ambulance uniform walks at the head and another at the foot. All day long they lift their comrades, first from their beds to the litter, next onto the operating table, then back again into their beds. This is no easy task.

To do this work a man must be strong and patient and very tender. And he always is all three. He will tell you that he would much prefer to be at the front, but since he has been placed here it is not for him to grumble. He will wipe the perspiration from his dripping forehead and absolutely refuse a box of smokes because he knows they're scarce and are intended for the "blesses." If the man on his stretcher is conscious he waits smilingly until the best-liked brand is selected from my supply. If the newly operated one is still in happy oblivion, he picks out what he thinks will please the sick one, promising to put it on the bedside table.

The soldier on the stretcher and the two at either end disappear around a corner, and three more come, and after them three more. It would all be most sickening if it weren't for the thought that these are the youngsters who stopped the rush on Paris, every one of whom will tell you that he wouldn't give up his experience for a million dollars.

The third floor in this hospital is much

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the nicest. It is the sunniest, hence the cheeriest. The two Geographic wards are rather far down to one end, which makes them very quiet. And that, of course, is the best of all. There are twelve beds in each ward, and there is a battered and banged-up American soldier in each bed. It costs $600 a year to keep him there—clean, beautifully cared for, and well nourished. But that sum cannot pay for the flowers on the tables, the phonograph and its records, the oranges in the afternoon, and the all-too-seldom ice-cream treat. Oranges cost ten cents apiece, and as one kid put it, "One ain't hardly worth the trouble o' peelin'." That boy was full of fever.

ANOTHER GEOGRAPHIC WARD FOR THE "TIGER CATS"

I am told that both of these wards are nearly, but not quite, financed for this year, and that there's talk of the Geographic Society opening a third. If that should come to pass, it would mean that twelve more of what the Germans already term the "tiger cats," heroes of Chateau-Thierry, or some other point quite as bloody, would eat and sleep in cleanliness and live or die blessing each member.

"Hello, American!" calls out a musical voice. "Is it true that Washin'ton's gone dry? I gotta reason foh askin', 'cause that's my home town."

"Such being the case," I say, "I wonder if you noticed the sign above this door?"

"I reckon I did," he assures me. "When they rolled me up on the stretcher I kept repeatin' those words to myself: 'Donated by the National Geographic Society of Washin'ton, D. C.,' 'cause I had a feelin' I was goin' to get a shock when they shifted me onto this bed. I kept thinkin' how all the girls in our family had helped in the donatin', and I kept sayin' ovah an' ovah, 'It's a good hunch; you're gonna get well.' An' first thing I knew I was here in bed as pretty as you please. Thanks, lady; that's my fav'rite flower. What is it?"

Through the wide-open windows the bright health-giving sun pours into Geographic Ward No. 1. Here the men are all "on the mend," so that a visitor, especially one bringing something to smoke, is mighty welcome.

FORTITUDE AND FRATERNITY

There is an air of real jollity, for the phonograph is blaring out that once popular melody, "Waiting for the Robert E. Lee," and even the boy in the wheeled chair is beating time with his one foot. When I can make myself heard I ask him if he'd like to have a flower. "Say, on the level," he chuckles, "what'd I do with it?"

I like him for that, just as I like the little pale one flat on his back on the bed in the corner. I can tell that he loves flowers from the way he handles the one I give him. He is very unhappy because some of the "guys" say he bawled all night. Well, if he did, it was because he was in such agony that half the time he didn't know he was doing it. This morning he found he'd chewed his handkerchief to rags, so they needn't say he hadn't TRIED to be quiet.

"That's all right," says a neighbor, "but if I'd a had something to flatten you out with I'd a flattened you out, you bet."

"YOU!" scoffs the pale one. "Maybe you don't know that I know it was YOU who got up outer bed, gave me the drink, and moved my leg three times."

THE BOY WHO DISCOVERED A SPY

"Got any chocolate?" begs one who is able to sit up in bed. He doesn't look more than seventeen, but insists that he'll be nineteen next Tuesday. He's got what he calls three "scratches," and throws back the covers to exhibit a leg bound up like a mummy. I can't help thinking that I'd hate to have "scratches" like his.

"But, gosh! it was worth it," asserts he. "If you'll stay with me a minute I'll tell you about it.

"I was a motor-cycle despatch bearer, so they let me carry a forty-five. I was pumping up a flat tire when I heard my captain talking to a man in French uniform. Now, you see, I know a lot o' German. All of a sudden this bird gets tangled up in his French and begins to fill in with a few Kaiser words.

"'Ha, Ha!' says I to myself; 'so that's the little idea.' I went straight up to him and I says, 'You're a spy, that's what

you are.' Just like that! And he never denied it, but started to beat it.

"The captain stood in the middle of the road, with his mouth wide open, as I started to run after the Dutchy. He could run some, let me tell you. When we got to the first turn there was a big military car painted just like a French one. What do you know about that? A man inside throws open the door, and then I got busy. Bing! BING! says I, and he went down like a lump o' dough.

"The fellow in the car jumped out, hauled him in, and the chauffeur started on high. The live one stood up in the back seat, and out o' three shots he made three hits. Whoopee! THIS is the life!"

HOW THE WAR "GETS" SOME

"Funny how this war 'gets you,'" soliloquizes a soldier young in years, but old in experience. "Why, when I was at home I couldn't watch my father kill a chicken. Now? Huh! Once I was racing along with some o' my pals, when we saw a mess o' squareheads hiding out in a ditch. 'All right,' says I. Take THAT fer the *Lusitania*, and THAT fer the *Tuscania*, and THAT and THAT and THAT fer them Belgium babies! And we threw every grenade we had with us."

The man from the north of Ireland, who hasn't been an American citizen very long, sighs and says, "Sure I like to lie here and think o' the sea." And the one who tells me he was born in Damascus and can speak seven languages compares his children to "bloomin' roses." The red-faced fat boy yawns, "Oh fer a dip at old Coney," and a fourth asks the nurse if it's true that only seven died last night.

"PATCH ME UP QUICK, DOC"

A shoulder, now almost well, is being dressed, and the surgeon's mouth twitches ever so little as he hears, "Patch me up quick, Doc, and get me away from here—I'm needed somewhere else."

The funny little Frenchman who answers to the name of "Blondy" has complete charge of the phonograph. He hardly waits for one record to finish before putting on another. Wondering why he should be here, I am told because he's "got the habit." He's been in the hospital so long that no one has the heart to send him away. Anyhow, he's SUCH a help. "But you ought to see him limp when the major comes around!"

"Only one thing worries me," announces a faint voice from the nearest cot. "The top of my tin hat and the top of my nut sailed away together, and if they don't give me back that helmet I don't care what becomes of me."

"You ought to wear your soovneer 'round your neck, like I do," admonishes another. He boastfully shows us what's left of a button—really only the rim. His tunic was open when Mr. Bullet said, "Howdy!" "Pretty good work," says he. "But not good enough."

From the pocket of what he calls his "kimona" a proud owner pulls out a piece of hard tack. In its center is a big chunk of shrapnel, and my attention is called to the fact that said hard tack is still intact. "And then they expect a TOOTH to crack it," he snorts.

THE GOLD-TOOTH SOUVENIR

"I seem to be the only unlucky one here," comes from an interested listener. He has black, curly hair and is so slight that his body is hardly outlined under the blankets. "When I left old Michigan I told my girl I'd bring her a souvenir that WAS a souvenir. 'None o' your old Dutch helmets for me,' says she. 'I want something o-ri-gi-nal.' 'You'll get it, sis; you'll get it,' says I. So, after I'd croaked my first I started in. He had the handsomest gold tooth YOU ever saw. And BEELEEVE ME! I worked. I pushed and I pulled and I twisted. And JUST when I thought I had it, I'll be doggoned if it didn't drop down the poor boob's neck."

"You unlucky?" demands an indignant bystander. "What do you think of me? First they made me a M. P., and I couldn't sleep nights for worrying about it. But I got out of that all right, all right. How? Well, when it came time to do the arresting, I was hard to catch, that's all. So they dismissed me from the force."

Some one inquires if its true that bread is so scarce in Paris that you can be arrested for feeding crumbs to the birds. Another says whether it's true or not, America's good enough for him. As for France, well, all HE's got to say about it

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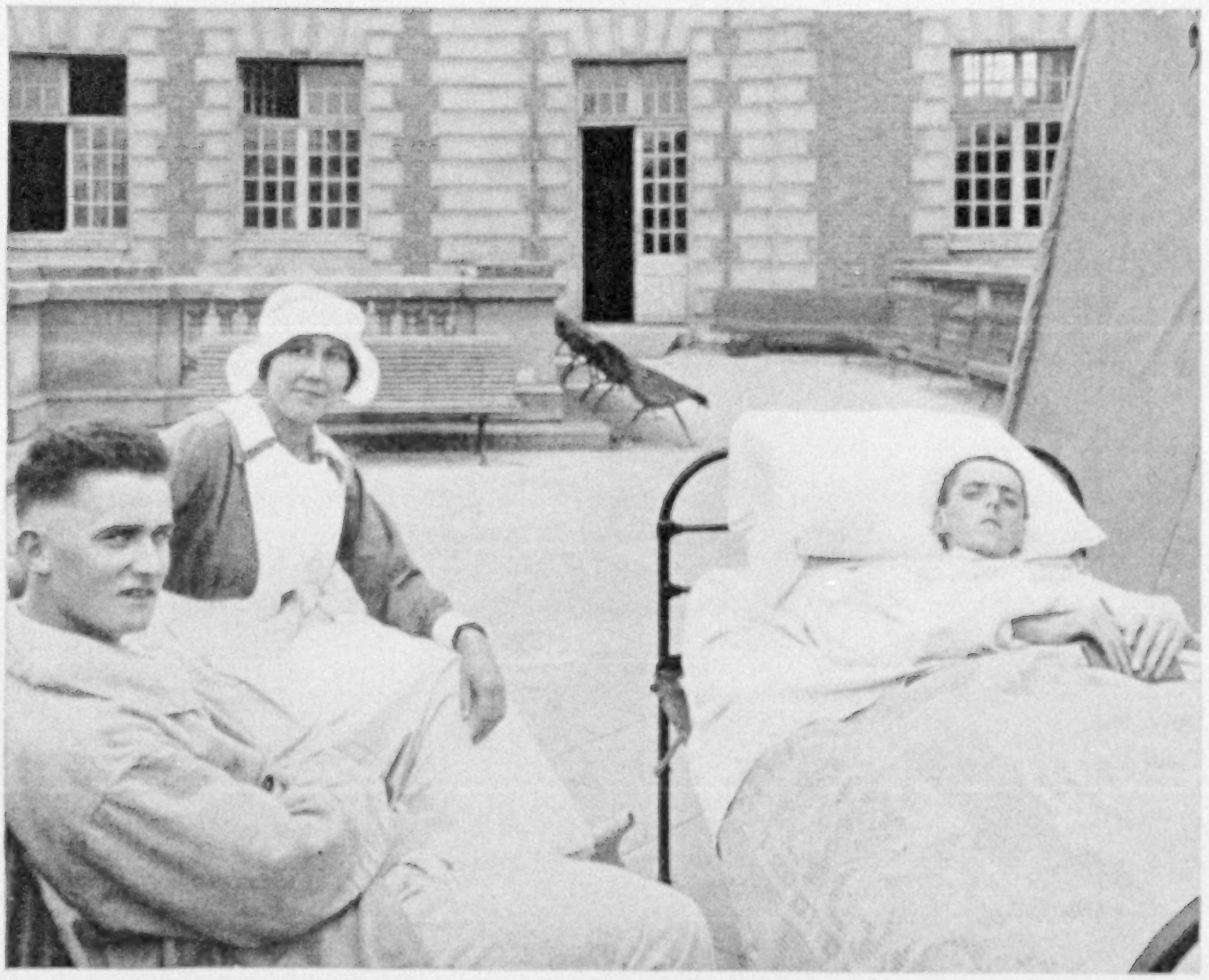

Courtesy of the American Red Cross

"THE FINEST SOLDIER IN ANY ARMY"

A "chunk of iron" from bursting shrapnel had buried itself in the flesh so close to his heart that the surgeons said he could not survive ether, so he told them to cut away without the "knock-out drops." "And he never wiggled a toe," testifies the nurse.

is that if the Lord came on earth a second time he'd find this country just like he left it.

"Oh, I don't know," chimes in a third. "Some parts of it ain't so bad. You take Ix the Pains (Aix les Bains), for instance. Some o' my comp'ny went there for 'leave' and they said it's just grand. You're met at the depot with a automobile and taken to the RIGHT hotel. Guv'ment car, of course. At night you put your shoes outside the door and next morning they're POLISHED. And you can have your breakfast in bed if you want it. Oh, la-la, la-la!"

"DOC, I'M YOUR MAN"

The two enormous, open-windowed tents are crowded to capacity, and dotted all about the wide immaculate terrace are men in rolling chairs. Only one is in a bed, and the nurse stops before him because she wants me to meet the boy known to all the hospital as the finest soldier in any army.

"Tell her about yourself," she orders.

"Why, there's nothing to tell," smiles Arthur, "except that I was wounded about a month and a half ago. They kept me in a French hospital until day before yesterday. They told me there was nothin' doin' as far as I was concerned. I said, 'You take me to some one that can talk my talk and then we'll see.' So they brought me here and the doctor looks me over and says the reason why they didn't cut was because the chunk of iron was too close to my heart, and so I couldn't stand to take ether. 'HOWEVER,' says he, 'if you're game

enough to let me do it WITHOUT knock-out drops—.' So I says, 'Doc, I'm your man.'"

"And he never wiggled a toe," chimes in the nurse.

"But," says Arthur, "I didn't care for it much when I heard him saw."

As I step into the corridor to go from Geographic Ward No. 1 to Geographic Ward No. 2, I take a few minutes to jot down some of the things I've promised to bring next time. Here are a few of them: One detailed map of the American front; one small comb and mirror; one jar of jam (strawberry); one cheap volume of Shakespeare (any play); two bars of a certain kind of soap; one good lead pencil and some funny post-cards; one guide book of Paris and one nail file.

But I've got to stop here to make way for at least half a hundred soldiers to pass. They are wearing bath-robes and house slippers and have nothing on their heads.

"THERE'S LONG-WINDED LIZZIE"

"SOME outfit for traveling," roars one. They all know they are leaving, but as to where they are going not one of them has the faintest idea. They'll pile into the waiting motor transports in the yard below, laugh and sing their way across town to a certain station, get on a train, and leave it whenever and wherever they're told to do so; for these are some of the "walking cases," which must be evacuated to make room for the swarms of newcomers who are due tonight. They almost knock me down in their eagerness for cigarettes, but in such a boyish, friendly manner that I can't possibly resent it.

Some of them light up immediately, while others remain to chat for a minute, and still others start whistling down the stairs. But everybody stops dead still when there comes a terrific BOOM!

"There's long-winded Lizzie again," says one. "By ginger! I'd like to lay my hands on the blankety-blank, gosh-dinged, double-dyed son of a sea-cook who does that dirty work. The ———!"

"Help!" I cry; and in my haste to get away from there I almost fall over a jolly big cripple, as he sails along in his "go-cart."

In answer to the usual "What happened to you?" I'm told that he was a gunner, trained to the minute. Only trouble was that he forgot to train his gun—haw, haw! So one fine morning she up and ran over his two feet and crushed them flat. "And that's all there is to that. Honk! honk!"

SERIOUSLY WOUNDED IN GEOGRAPHIC WARD NO. 2

Geographic Ward No. 2 is filled with very seriously wounded.

Entering, I make the regulation speech about having Sweet Caporals, Khedives, and Lucky Strikes; also Bull Durhams to roll. Unfortunately, I hadn't noticed in time that the poor creature just in front of me is trying not to wince as the nurse inserts a drainage tube in his fresh and frightful wound. His arm is off just below the shoulder, but he actually smiles as he says, "You see, I can't very well roll my own."

He seems glad to talk, and, because I can think of nothing more comforting to say, I finish with, "After all, it's your left arm, isn't it?" At that he laughs aloud, for HE had been left-handed.

I put a few blossoms on the second bed, where lies an agonized man whose eye is out. I hear him whisper, "Good God, help me!" I see a rosary around his neck, and on the stand beside him, propped against a medicine bottle, a picture of two little girls. The wobbly, childish inscription reads: "We are praying for our dear papa."

The one in bed No. 3 says the doctor told him he had eighteen wounds, though he himself only counted seventeen. He was just UNDER the shell when it exploded, and so he got most of it. "I guess I'd have done better if I'd have stayed at home—I don't think," smiles he. "Volunteer?" I ask. "I should HOPE I was," says he.

The gasping, breathless one with shrapnel in his lungs doesn't like the smell of hospitals and wonders if I could bring him a bit of perfume. "The kind the fainting ladies use, you know," he grins.

The freckled-faced fighter next in line tells me, with great sparkling eyes, that the hole in his hip is bigger than his two hands and offers to prove it. He is so

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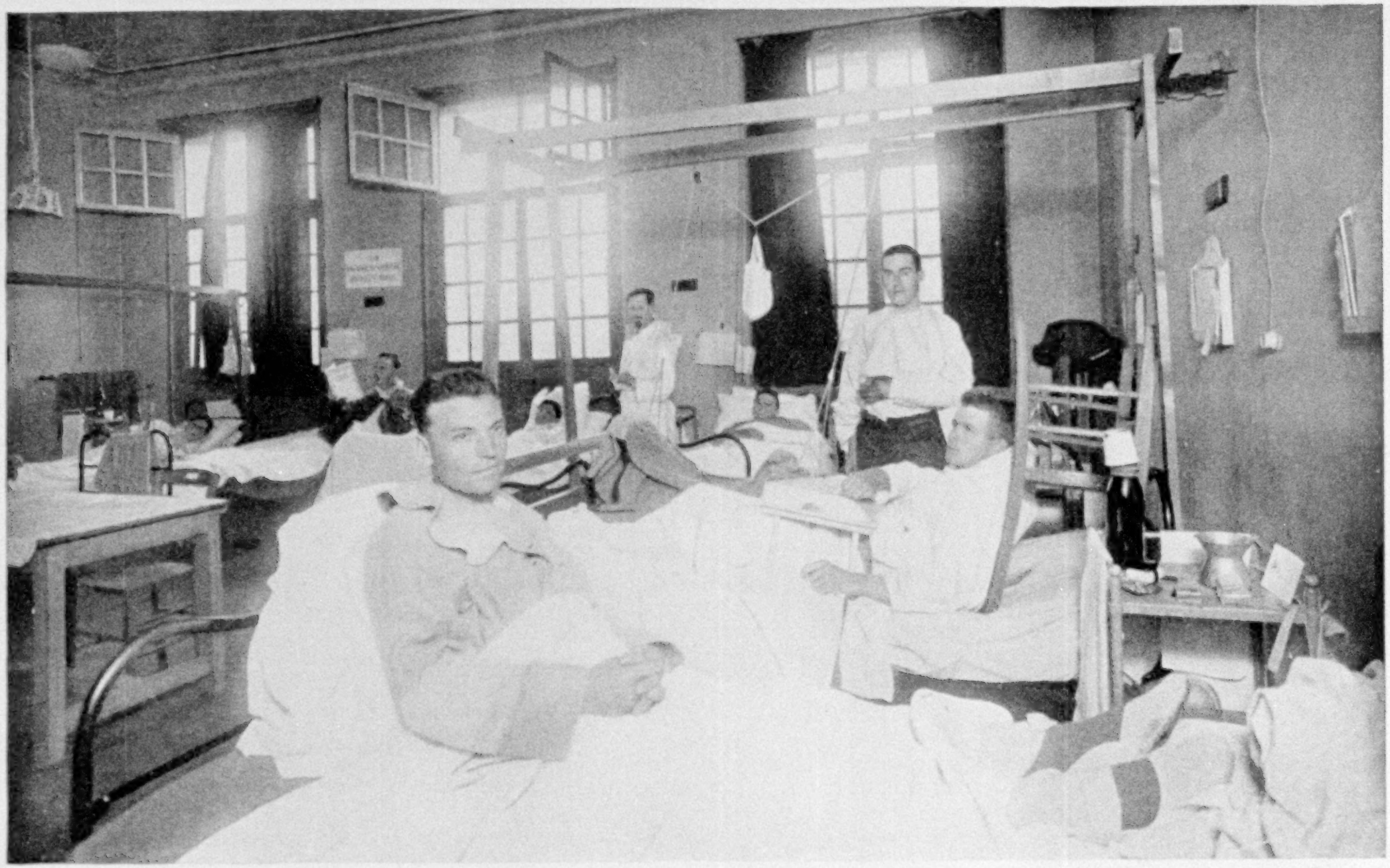
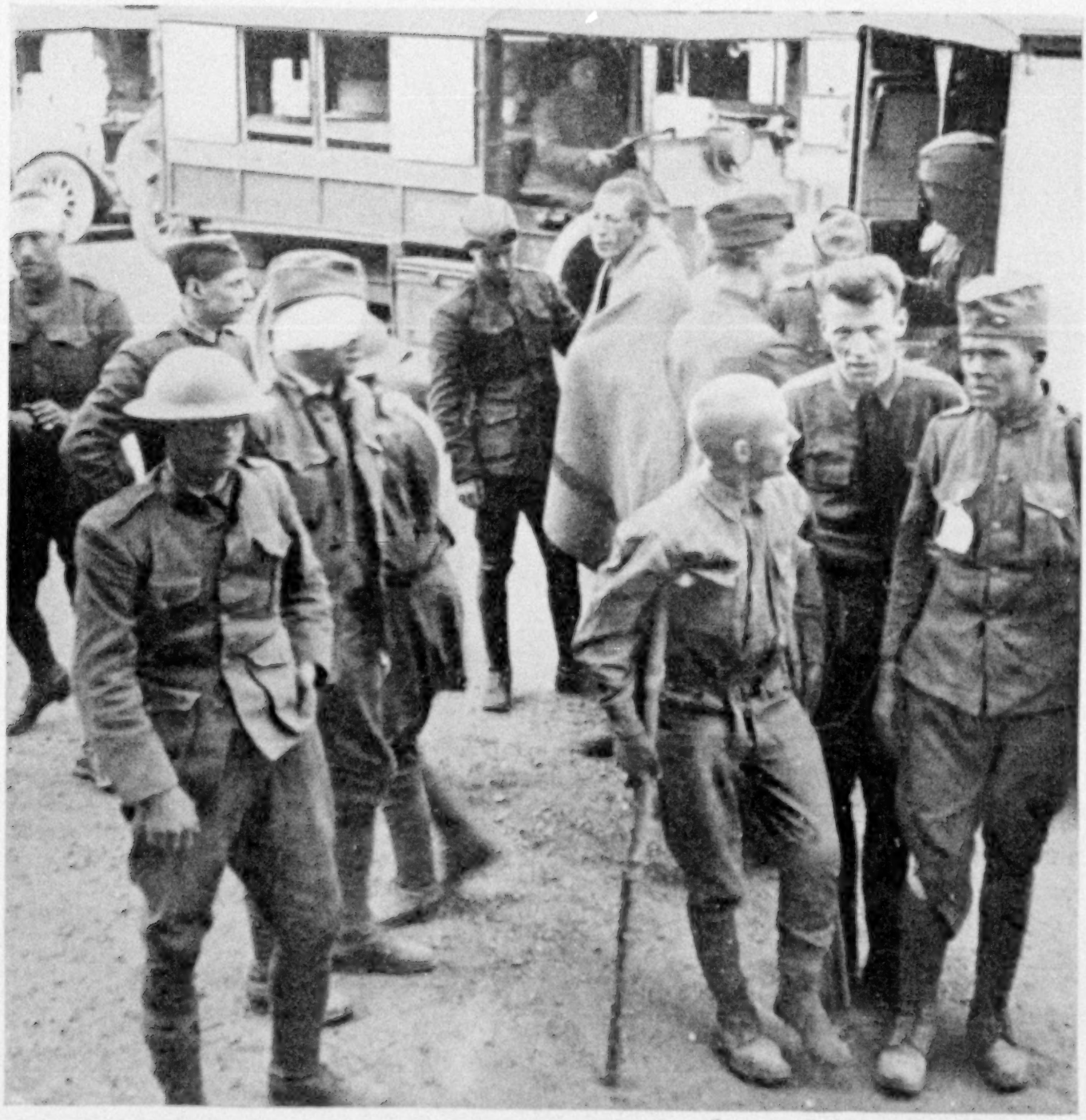


Courtesy of the American Red Cross

BOTH GEOGRAPHIC WARDS IN THE NEUILLY HOSPITAL ARE ON THE THIRD FLOOR, WHICH IS THE SUNNIEST, HENCE THE CHEERIEST

"There is a battered and banged-up American soldier in each of the twenty-four Geographic beds. It costs $600 a year to keep him there—clean, beautifully cared for, and well nourished. But that sum cannot pay for the flowers on the tables, the phonograph and its records, the oranges in the afternoon, and the all-too-seldom ice-cream treat."

MDX



Courtesy of the American Red Cross

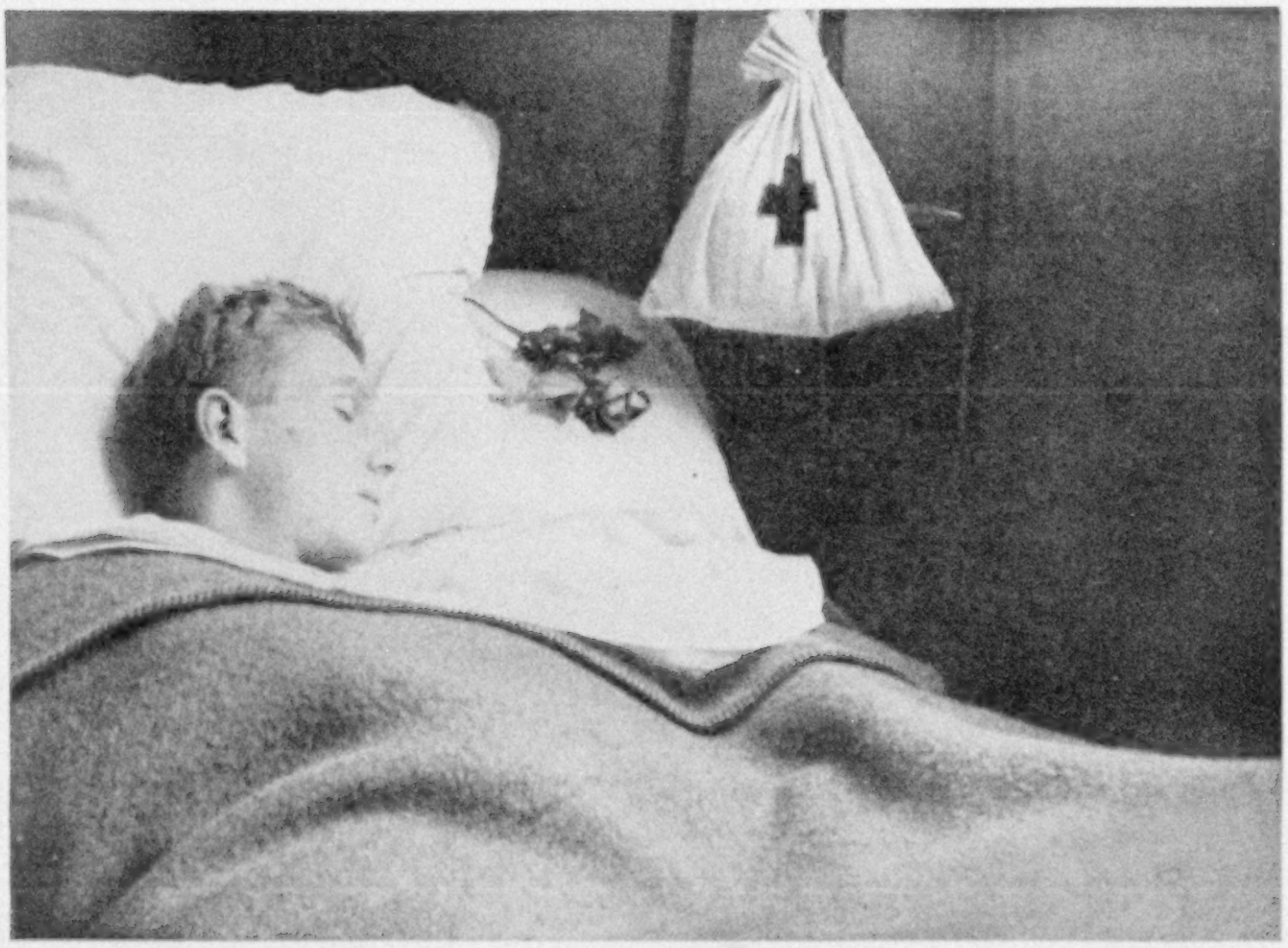
READY TO LEAVE THE HOSPITAL IN ORDER TO MAKE ROOM FOR THE EVER-INCREASING STREAM OF NEW ARRIVALS

They all know they are leaving, but as to where they are going not one of them has the faintest idea. These are some of the "walking cases" which must be evacuated in order that the more helpless newcomers, due at night, may be accommodated.

much better today that he is to be allowed to read a little. So I promise to bring him some funny papers. "Funny papers nothin'; I want rob-bers and mur-r-ders."

A boy who looks mostly bandages asks me to write to his mother. He's got "shrap" in his thigh, his shoulder, both arms, and his head. He cautions me to write the letter carefully, saying it's his right arm only, so she'll understand why he isn't doing it himself. And the last thing he reminds me is to be sure to put in PLENTY of love.

"Why, of course I can smoke," smiles another, who hasn't any arms at all. "Some one is always coming in to do something for me, and I'm almost never without a fag. Keeps a fellow going, you know. It was the same way on the train coming here. The ones with all the arms did the cigarette rolling, and when we had to change, the ones with all the legs



Courtesy of the American Red Cross

A TRIBUTE TO A SLEEPING HERO

did the walking. Thanks awfully for the posy."

The shadows are lengthening on the wall, as I noiselessly leave this room of sorrow. From a little way down the hall, along with the pleasant clatter of aluminum dishes and knives and forks, comes the unmistakable smell of chicken gravy. The inmates of Geographic Ward No. 1 are already sitting up and taking notice. Soon the wheeled serving table stops before their door, and the funny boy, who, according to his own statement, "tried to stop a shell with his hand," jumps up to help. He wants me to know that there is rice to go with the gravy, and white bread, and new peas, and lettuce, and milk, and mixed stewed fruit.

I notice that boys whose bones are commencing to knit are also beginning to recover their appetites. And I can't help saying, "It COULD be worse, couldn't it, Yanks?"

The busy helper licks a finger and, gesticulating grandly with a dripping spoon, bursts forth like this: "Say, lady, listen: When you haven't seen a razor for so long that your face looks like a barbed-wire entanglement; when you haven't had a drop of water except inside for four days; when you 'get yours' and somebody carries you over thousands of miles of bumps in a road; when the doctor plugs you up and says NEXT; when you're squeezed in a train for two days and two nights; when the ambulance lands you here and you say good-by to your muddy outfit and your underwear that walks; when you're bathed and combed and your teeth are washed; when your fresh, white bandage doesn't show a single drop of blood; when you're put in a bed with sheets and a regular pillow, and the nurse comes round and gives you a pat just for luck and hands you something good to drink out of a cup; when you lie back and stretch out your legs and close your eyes—SAY, fellows! Ain't it a gr-rand-n-glo-ryus feeling? And say—just give a guess as to how we feel toward the members of this here National Geographic Society."

Any time is dancing time wherever there is a Victrola

Whenever you feel like dancing, when a few friends stop in, when soldier and sailor boys are home on furlough, the Victrola is always ready with the music.

Music so superb as to take the place of an orchestra, and yet so accessible that you can have an impromptu dance at any time.

In camp and on shipboard the Victrola enables our boys in the service to have their little dances, too.

Everywhere the Victrola and Victor Dance Records are a constant invitation to dance—a source of keen wholesome pleasure.

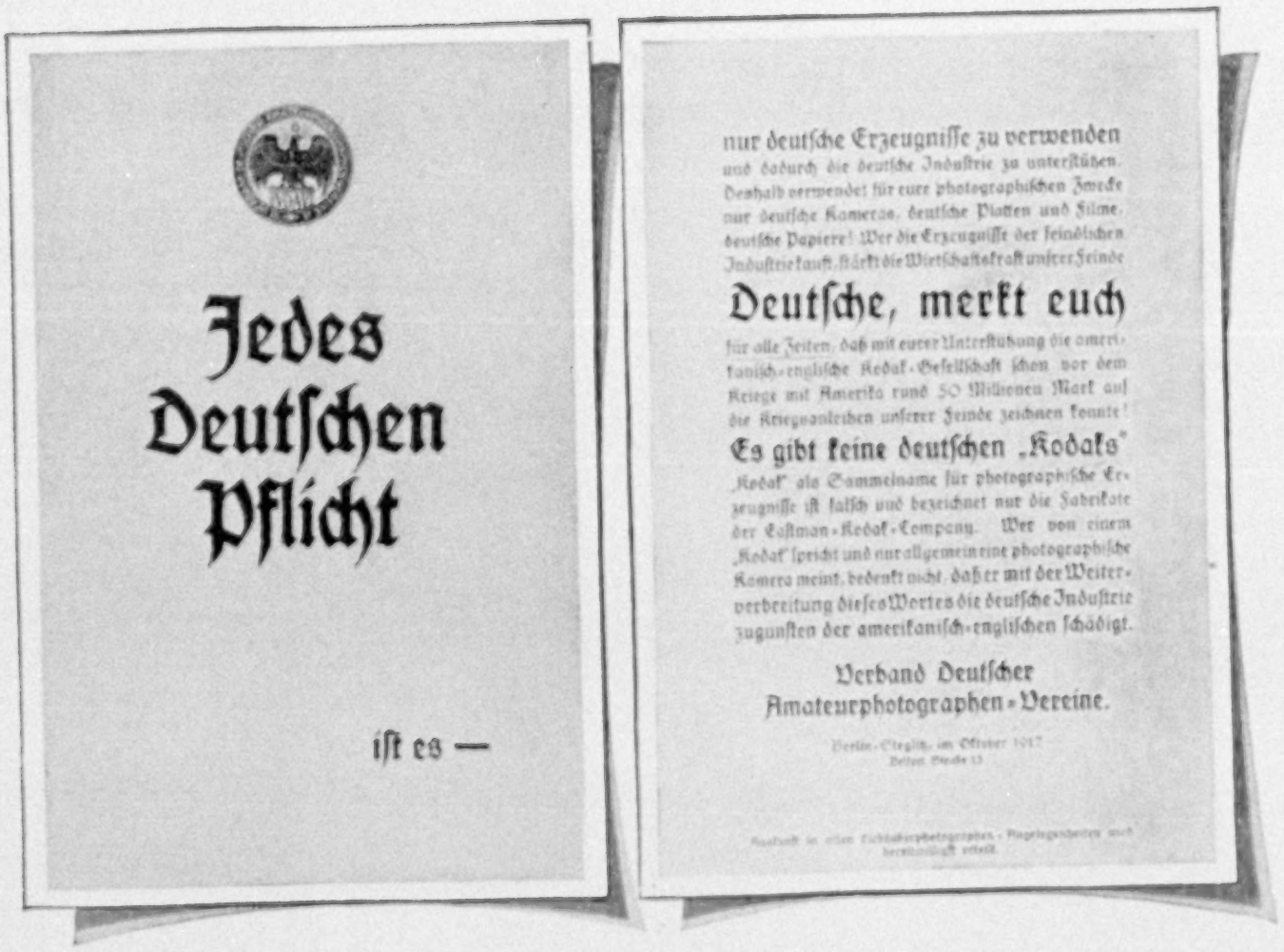
Hear the newest Victor Dance Records today at any Victor dealer's. He will gladly play any music you wish to hear and demonstrate the various styles of the Victor and Victrola—$12 to 950.

Victor Talking Machine Co., Camden, N. J.

Berliner Gramophone Co., Montreal, Canadian Distributors

XUM

To the People of Germany they said:



Jedes
Deutschen
Pflicht

ist es —

nur deutsche Erzeugnisse zu verwenden
und dadurch die deutsche Industrie zu unterstützen.
Deshalb verwendet für eure photographischen Zwecke
nur deutsche Kameras, deutsche Platten und Filme,
deutsche Papiere! Wer die Erzeugnisse der feindlichen
Industrie kauft, stärkt die Wirtschaftskraft unserer Feinde

Deutsche, merkt euch

für alle Zeiten, daß mit eurer Unterstützung die amerikanisch-englische Kodak-Gesellschaft schon vor dem Kriege mit Amerika rund 50 Millionen Mark auf die Kriegsanleihen unserer Feinde zeichnen konnte!

Es gibt keine deutschen „Kodaks"

„Kodak" als Sammelname für photographische Erzeugnisse ist falsch und bezeichnet nur die Fabrikate der Eastman-Kodak-Company. Wer von einem „Kodak" spricht und nur allgemein eine photographische Kamera meint, bedenkt nicht, daß er mit der Weiterverbreitung dieses Wortes die deutsche Industrie zugunsten der amerikanisch-englischen schädigt.

Verband Deutscher
Amateurphotographen-Vereine.

Berlin-Steglitz, im Oktober 1917.
Bismarckstraße 13

Auskunft in allen Lichtbildphotographen-Angelegenheiten wird bereitwilligst erteilt.

The illustration shows a pamphlet signed by the Association of German Amateur Photographers' Societies and dated Berlin, October, 1917. It is reproduced from a photographic copy lately received in this country. The translation in full is given on opposite page.

XUM

—*If it isn't an Eastman it isn't a Kodak!*

A translation of the circular in full is as follows:

"It is the duty of every German to use only German products and to patronize thereby German industry. Therefore, use for photographic purposes only German cameras, German Dry Plates and German papers. Whoever purchases the products of enemy industries strengthens the economic power of our enemies.

"Germans! Remember for all times to come that with the aid of your patronage the American-English Kodak Co. subscribed before the war with the United States, the round sum of 50,000,000 marks of war loans of our enemies!

"There are no German 'Kodaks'. ('Kodak' as a collective noun for photographic products is misleading and indicates only the products of the Eastman Kodak Co.) Whoever speaks of a 'Kodak' and means thereby only a photographic camera, does not bear in mind that with the spreading of this word, he does harm to the German industry in favor of the American-English."

If it isn't an Eastman it isn't a Kodak!

EASTMAN KODAK COMPANY
Rochester, N. Y. *The Kodak City*

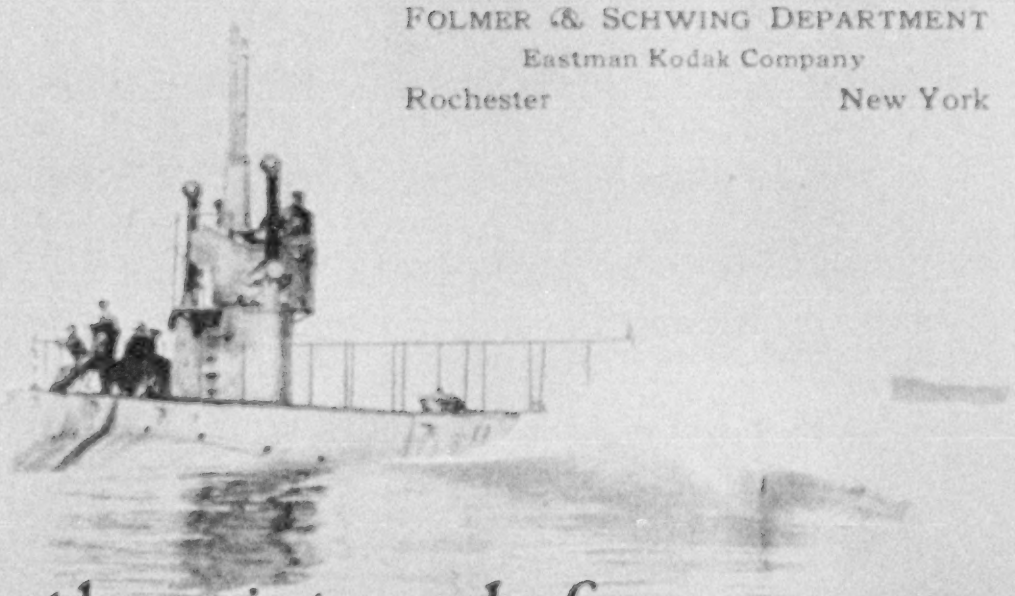
A Dull Cloudy Day--
but a Perfect Snapshot

THE remarkable speed of the Graflex does more than stop motion—it makes fully exposed snapshots possible in *poor light*. You'll save many an otherwise hopeless picture with the aid of the

GRAFLEX Camera

A unique reflecting camera, that lets you see your picture right side up and *focus* as you take it; suitable for any type of work—landscapes, child portraiture, auto races; a camera with an exposure range from "time" to a thousandth of a second, and really simple to operate. Ask your dealer for free booklet, "Why I Use a Graflex," or write us.

FOLMER & SCHWING DEPARTMENT
Eastman Kodak Company
Rochester New York



See the picture *before* you snap it

Threefold Co-operation

Every telephone connection requires co-operation. The slightest inattention or indifference on the part of the person who calls, or the company that makes the connection, or the person who is called results in a corresponding deficiency in service. Each is equally responsible for the success of the service.

Not only is it to the advantage of the individual himself to use the telephone efficiently, but his conservation of the advantages of these national lines of speech benefits all telephone users.

Accuracy in calling, promptness in answering, clear and deliberate talking, courtesy and patience on the part of both user and operator are essentials of service, and must be mutual for good service.

Efficient telephone operation is vital to the war work of this country. The army, the navy and the myriad industries contributing supplies depend on the telephone. It must be ready for instant and universal use. The millions of telephone users are inseparable parts of the Bell System, and all should patriotically contribute to the success of the service.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

"Mention the Geographic—It identifies you."

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RED GUM *"AMERICA'S FINEST CABINET WOOD"* RED GUM

AN ENDURING HARDWOOD, YET SOFT AS SATIN TO THE TOUCH. ITS NATURAL TONE A RICH, WARM BROWN. "A JOY TO THE EYE."

EUROPE WAS USING AMERICAN RED GUM FOR FINE CABINET WORK YEARS BEFORE AMERICA'S PRIDE AWOKE TO ITS OWN.

Enjoy Beauty! Write for Samples GUM LUMBER MFRS. ASSN. 1311 Bank of Commerce Bldg. MEMPHIS, TENN. *Wish Knowledge! Write for Booklet*

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in the

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The Membership Fee Includes Subscription to the National Geographic Magazine

DUES: Annual membership in U. S., $2.00; annual membership abroad, $3.00; Canada, $2.50; life membership, $50. Please make remittances payable to National Geographic Society, and if at a distance remit by N. Y. draft, postal or express order.

Please detach and fill in blank below and send to the Secretary

_____ *191*

To the Secretary, National Geographic Society,
Sixteenth and M Streets Northwest,
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I nominate _____

Address _____

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for membership in the Society.

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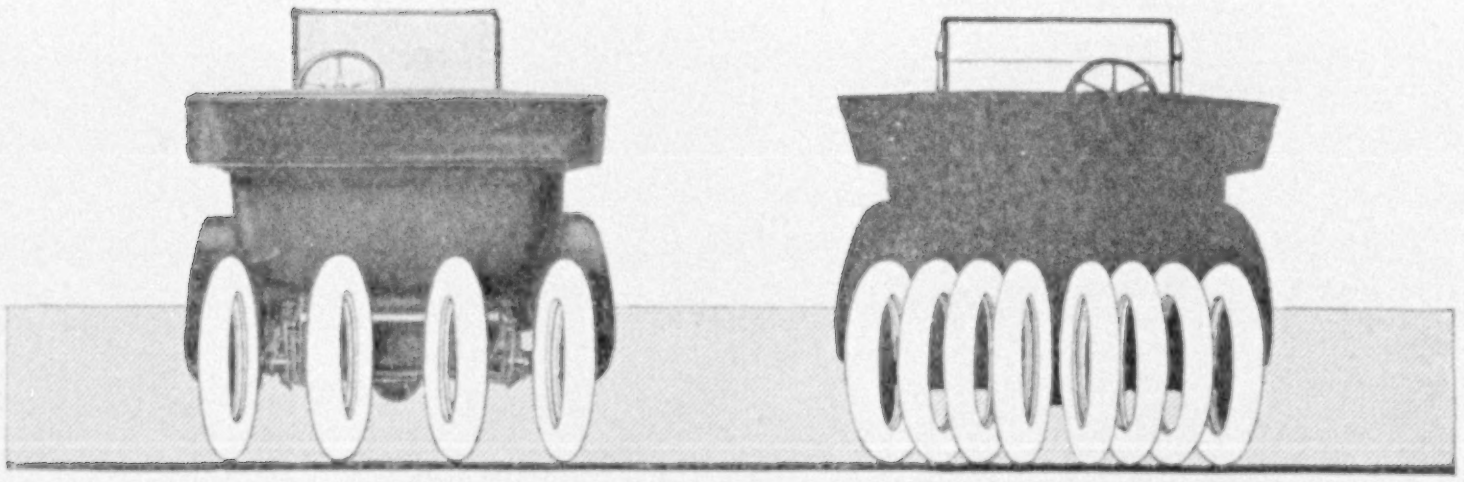
7-18 (Write your address)



How Many Tires Does *Your* Car Need To Go 10,000 Miles?

The above question is of direct interest to you. It makes no difference whether you are concerned about motoring economy for personal reasons, or simply as a principle of national conservation.

The average car (on the right) either heavy, or rigidly-built, or both—to go 10,000 miles, needs an extra set of tires, or eight tires in all.

The Franklin Car (on the left) to go the same distance—and further—needs only the four tires on the car, or half as many as the other.

There could be no clearer illustration of the timely economy of the Franklin Car; nor a more direct indictment of *unnecessary* motor car weight.

For it is excess weight that prevents the average heavy and rigid car from equaling the publicly-known Franklin tire-mileage. The action of the weight of an automobile on the tires is similar to a hammer blow—and the heavier the hammer the harder and more destructive the blow. Heavy weight pounds out tires prematurely. And the heavy car owner, accustomed to paying for tire-mileage he doesn't get, accepts this as a matter of course—until he meets a Franklin owner.

For Franklin owners get a consistent delivery of 10,000 miles or more to the set of tires.

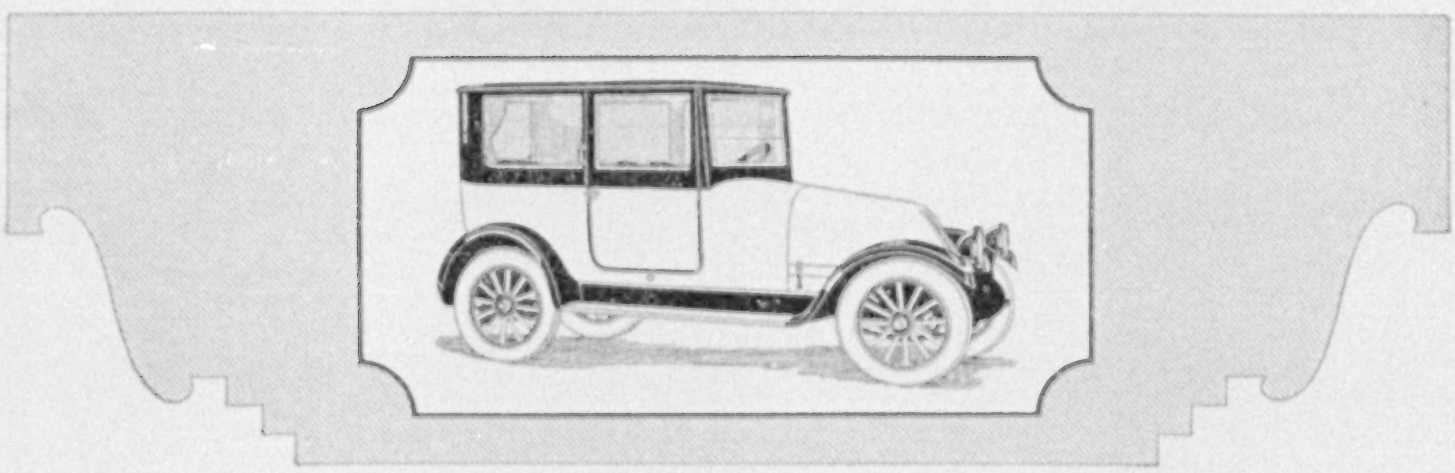
The reason lies in Scientific Light Weight and Flexible Construction. The Franklin weighs 2445 pounds—the right weight for a full-size five passenger car. It also carries the minimum *unsprung* weight—weight *below* the springs, that contributes to the pound and shock tires must meet.

Franklin Flexible Construction—full elliptic springs, instead of the usual compromise type; chassis frame of tough, resilient ash instead of unyielding steel—is still another reason why tires on the Franklin get every opportunity to deliver the full mileage that is in them. This flexible construction reduces road shocks on the tires. There are no torque bars or strut rods to cause the rigidity that leaves tires unprotected.

These are facts of Franklin Construction that affect the whole performance of the car. Because of Scientific Light Weight, because of Flexible Construction, the Franklin is not only economical in tires, but it also gives a day-by-day delivery to its owners of 20 miles to the gallon of gasoline—instead of 10.

Think of these things—and decide whether any car that combines fineness with motoring economy such as this, is not worth your immediate inspection; especially in these days when waste in motoring is not going to be considered any more legitimate than waste in anything else.

FRANKLIN AUTOMOBILE COMPANY, SYRACUSE, N. Y.



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No Man's Land: The Sahara

NEW FOURTH SERIES

Scenes from Every Land

200 Full-page Illustrations, 24 Pages in Matchless Natural Colors
20,000 Words of Descriptive Text

By GILBERT GROSVENOR, Editor National Geographic Magazine

EXCELLING in beauty and in compelling interest its three predecessors, the fourth volume of the National Geographic Society's "Scenes" series may now be secured from the Washington headquarters of the Society. The first two series of "Scenes from Every Land" have been entirely exhausted and cannot be had at any price, while only a few copies remain of the third. To insure your copy of the NEW series you should order at once.

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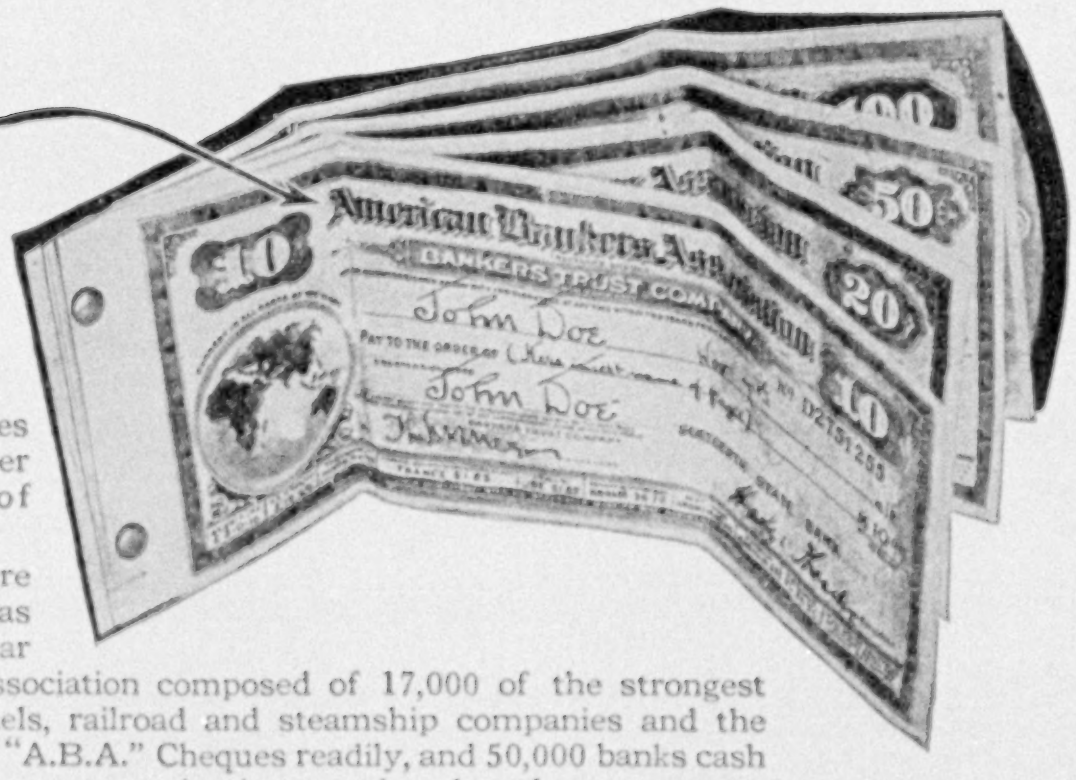

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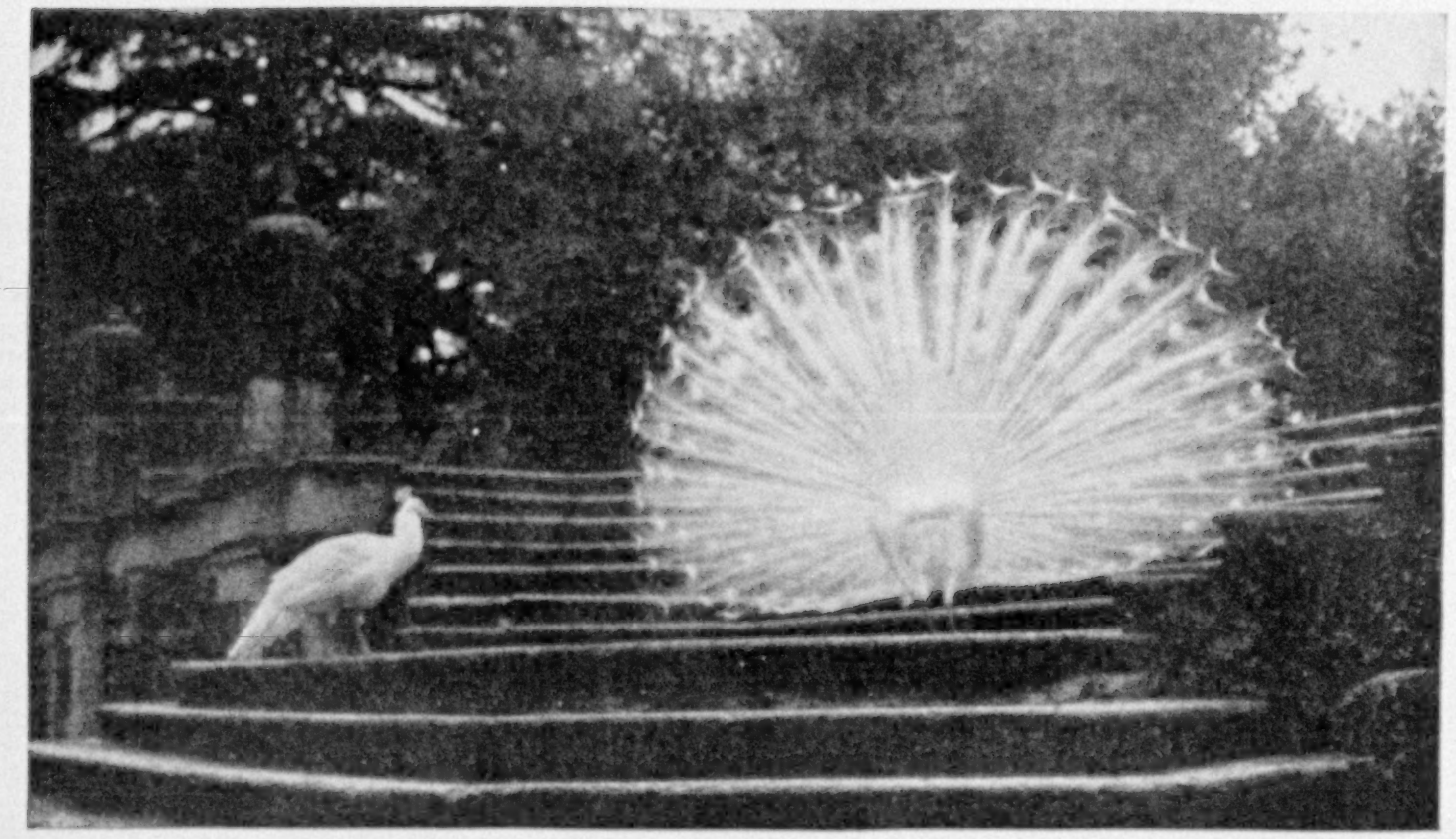

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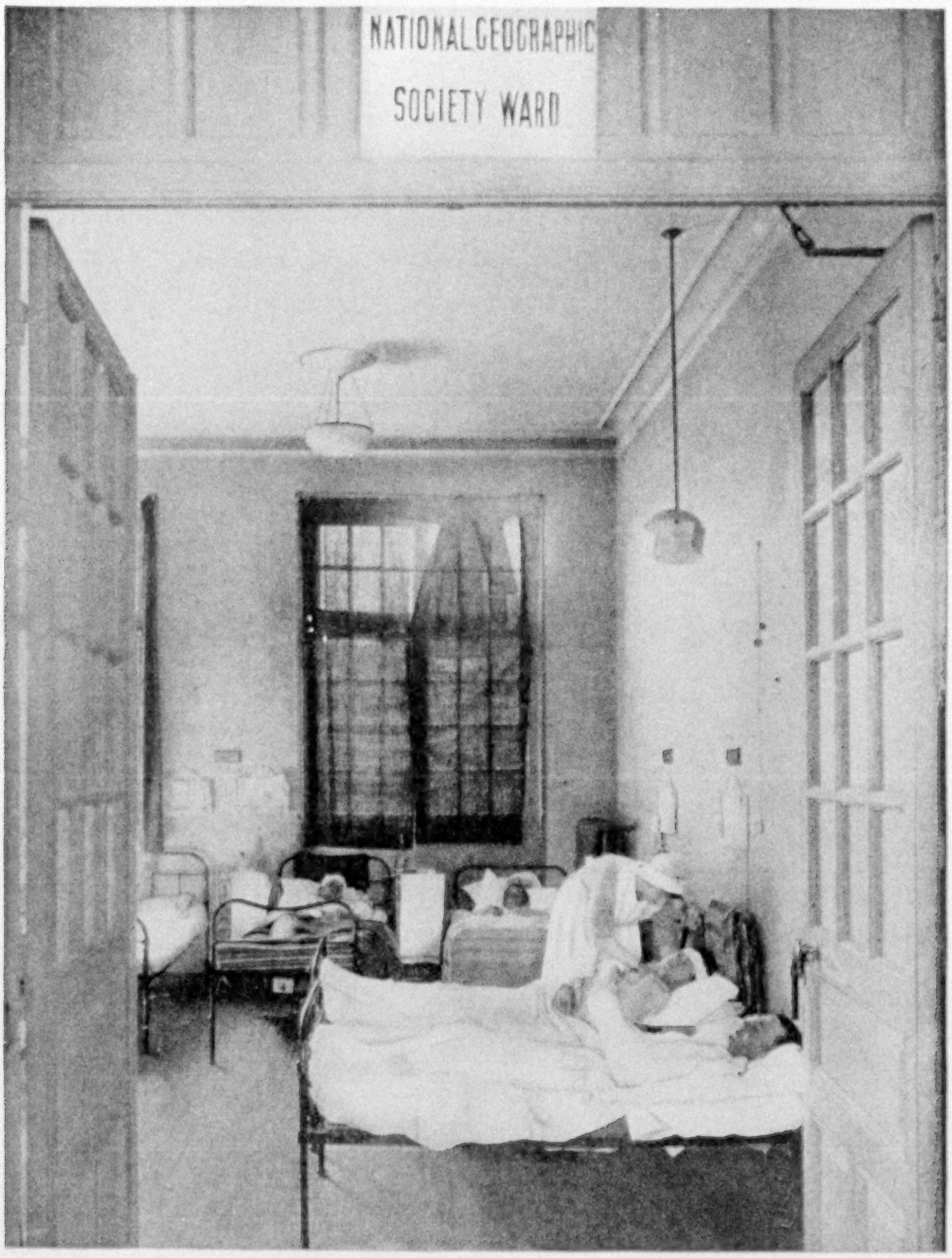

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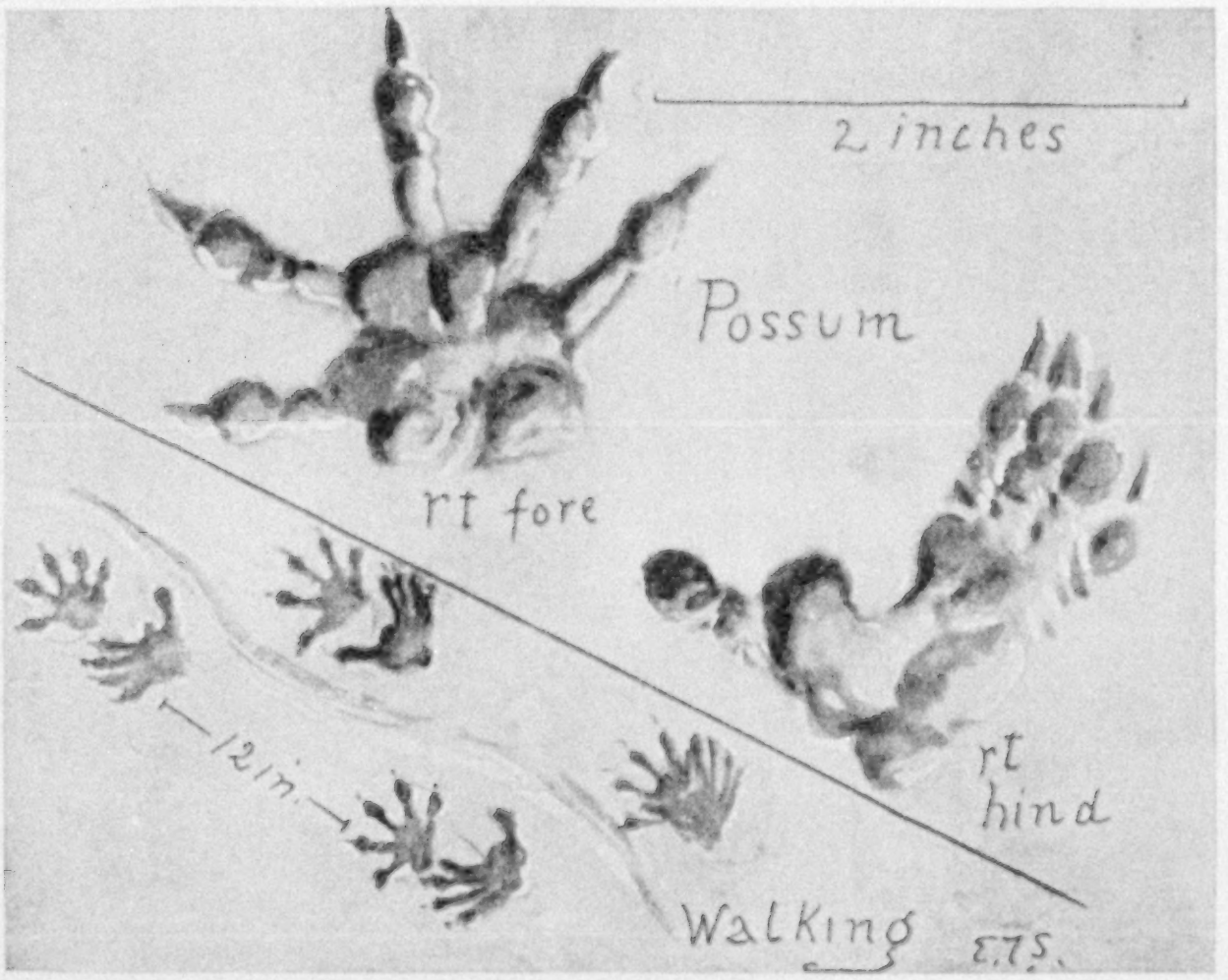

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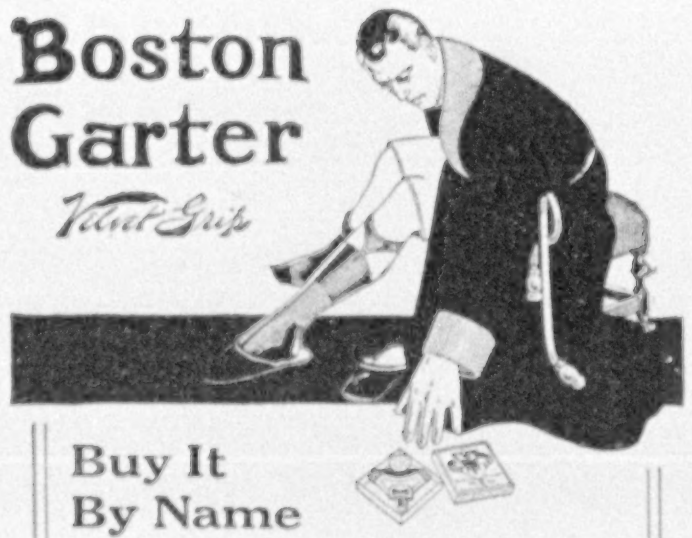

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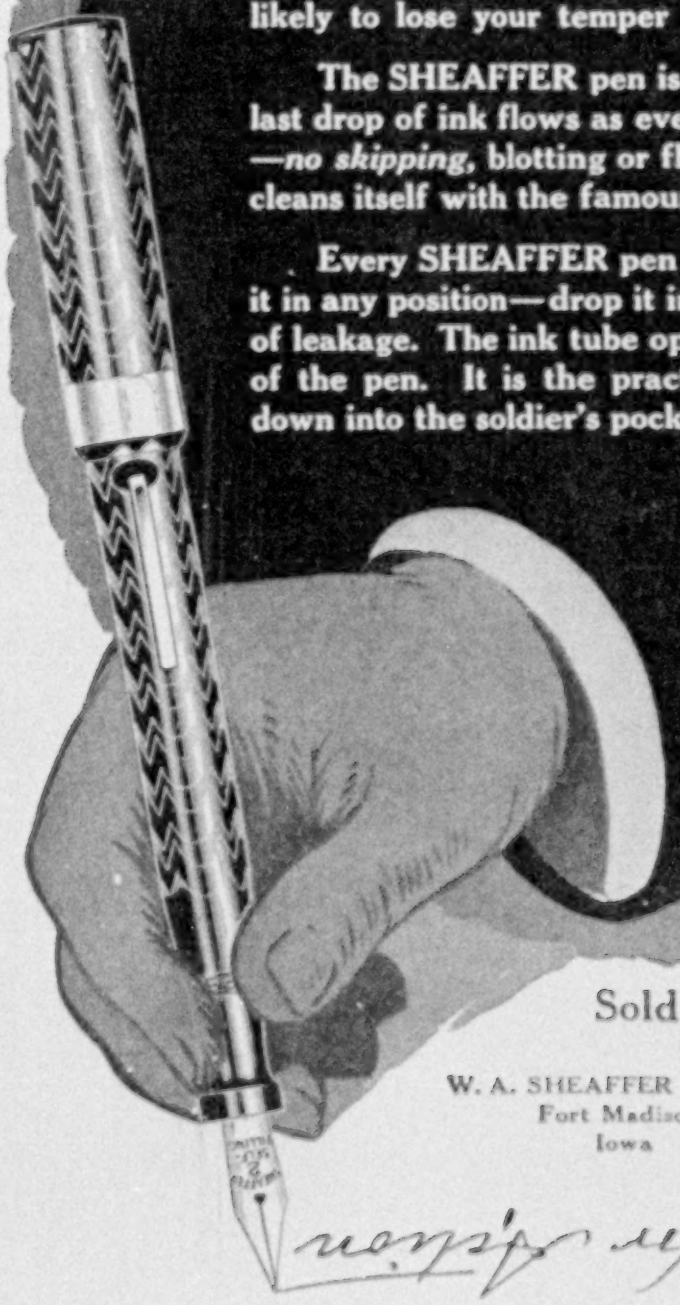

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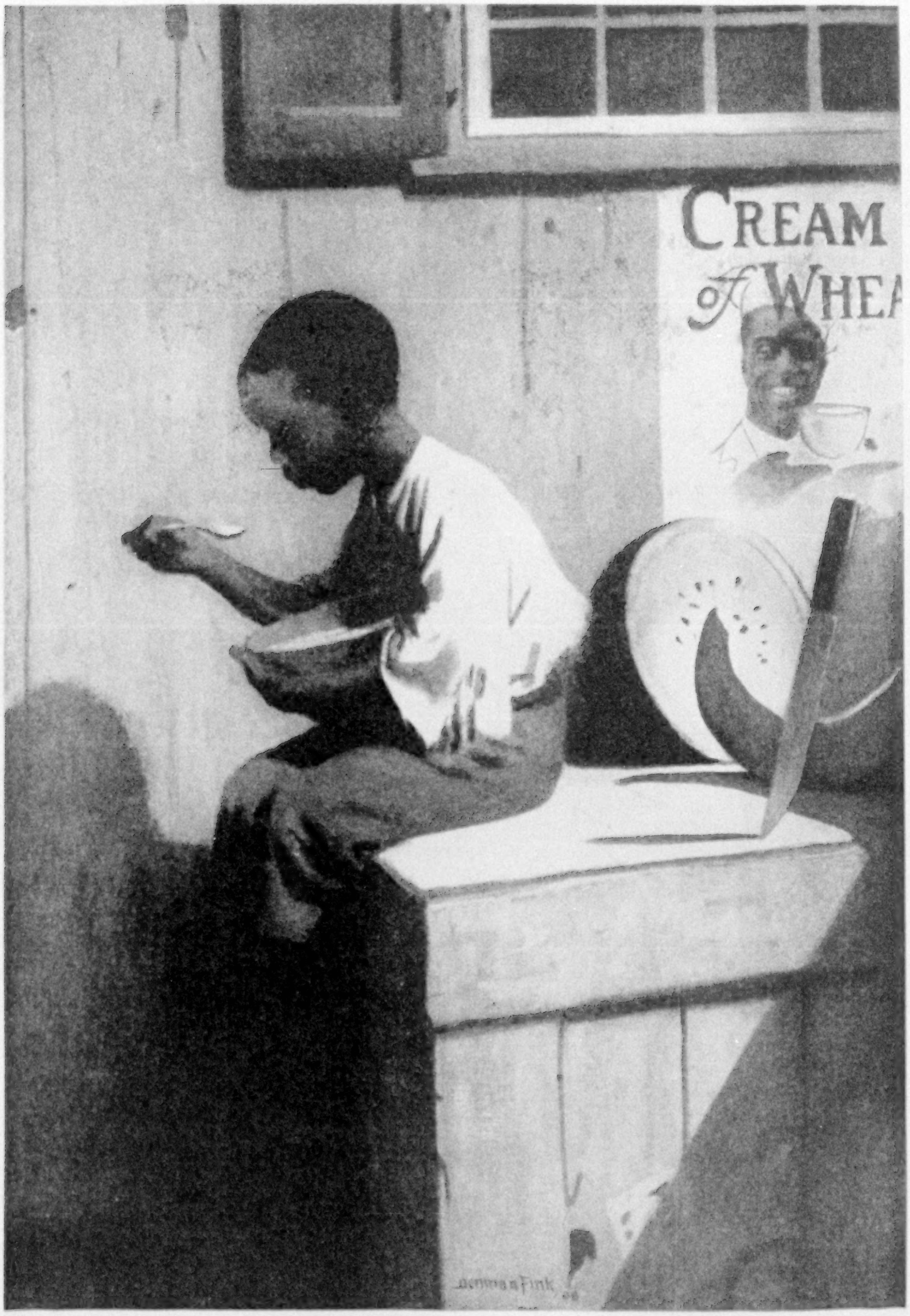

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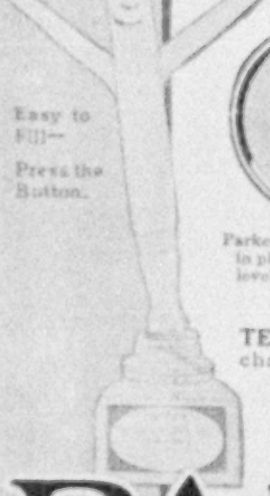

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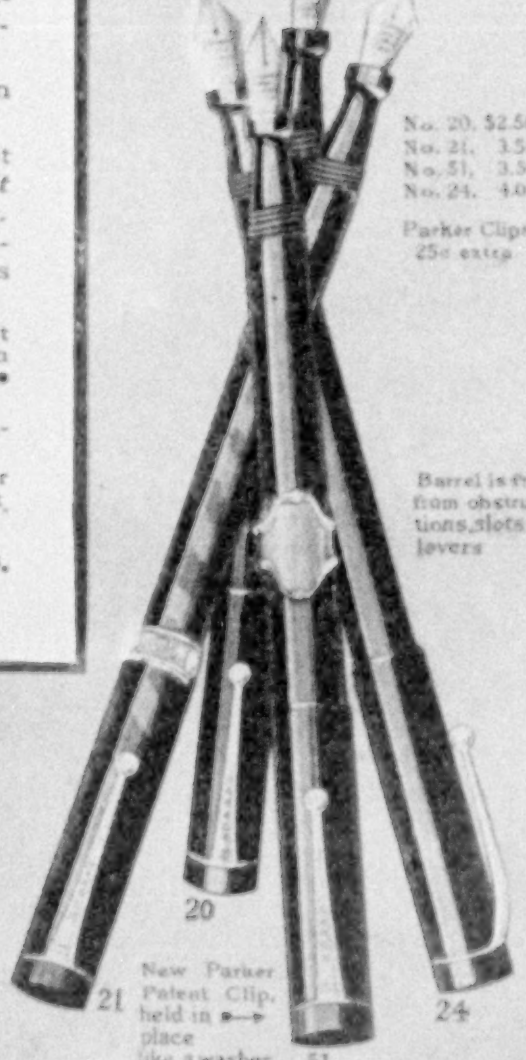

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